

ENVIRONMENTAL ASSESSMENT BOARD



ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARINGS

VOLUME: 57

DATE: Thursday, September 12, 1991

BEFORE:

HON. MR. JUSTICE E. SAUNDERS	Chairman
DR. G. CONNELL	Member
MS. G. PATTERSON	Member

FARR
ASSOCIATES &
REPORTING INC.

(416) 482-3277

2300 Yonge St. Suite 709 Toronto, Canada M4P 1E4



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ENVIRONMENTAL ASSESSMENT BOARD
ONTARIO HYDRO DEMAND/SUPPLY PLAN HEARING

IN THE MATTER OF the Environmental Assessment Act,
R.S.O. 1980, c. 140, as amended, and Regulations
thereunder;

AND IN THE MATTER OF an undertaking by Ontario Hydro
consisting of a program in respect of activities
associated with meeting future electricity
requirements in Ontario.

Held on the 5th Floor, 2200
Yonge Street, Toronto, Ontario,
on Thursday, the 12th day of September,
1991, commencing at 10:00 a.m.

VOLUME 57

B E F O R E :

THE HON. MR. JUSTICE E. SAUNDERS	Chairman
DR. G. CONNELL	Member
MS. G. PATTERSON	Member

S T A F F :

MR. M. HARPUR	Board Counsel
MR. R. NUNN	Counsel/Manager, Informations Systems
MS. C. MARTIN	Administrative Coordinator
MS. G. MORRISON	Executive Coordinator

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J.F. HOWARD, Q.C.)	
J. LANE)	
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J. PASSMORE)	
R. WATSON)	MUNICIPAL ELECTRIC
A. MARK)	ASSOCIATION
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P. MORAN)	AGENCIES
C. MARLATT)	NORTH SHORE TRIBAL COUNCIL,
D. ESTRIN)	UNITED CHIEFS AND COUNCILS
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		ONTARIO INDIANS
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D. STARKMAN)	GROUPS
D. ARGUE)	
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M. MATTSON)	ENERGY PROBE
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(Cont'd)

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K. ROSENBERG)	
C. GATES)	
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U. FRANKLIN)	FOR PEACE
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D. HORNER)	BOARD AND CHAMBER OF COMMERCE

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1 ---Upon commencing at 10:05 a.m.

2 THE REGISTRAR: This hearing is now in
3 session.

4 THE CHAIRMAN: Ms. Couban?

5 MS. COUBAN: Good morning, Mr. Chairman.
6 I would like to clarify a matter that arose during Mr.
7 Greenspoon's cross-examination yesterday when he
8 referred Volume 47, page 8379, lines 8 to 9, when he
9 was quoting a response from a witness whose name I
10 don't recall, but the quote Mr. Greenspoon referred to
11 was:

12 "Then, in late June, the Minister of
13 Energy proposed a wide range of
14 aggressive energy efficiency initiatives
15 in a consultation workshop".

16 And there was some discussion yesterday
17 as to the status of those initiatives.

18 I contacted the Ministry of Energy and
19 they have confirmed that their ministry developed
20 policy proposals as part of the process of developing
21 an energy efficiency policy framework.

22 And at the Glendon College session
23 referred to by Mr. Greenspoon, the Ministry of Energy's
24 policy proposals were discussed in a multi-stakeholder
25 consultation session.

1 I am further advised that consultation on
2 specific aspects of the proposal is continuing, but the
3 document that Mr. Greenspoon and the witnesses were
4 referring to yesterday and the initiatives discussed
5 therein are only policy proposals and are not
6 government policy at this point.

7 Thank you, Mr. Chairman. I hope that clarifies the
8 matter.

9 THE CHAIRMAN: Thank you, Ms. Couban.

10 There is no one here from Northwatch this
11 morning, I take it.

12 MS. COUBAN: No. I discussed this with
13 Mr. Greenspoon yesterday and indicated that this was my
14 information. He advised me that he was not intending
15 to pursue that line of cross-examination anyway.

16 THE CHAIRMAN: All right. So he is aware
17 of what you have just put on the record?

18 MS. COUBAN: Yes, he is. Thank you.

19 THE CHAIRMAN: Thank you.

20 Mrs. Formusa?

21 MRS. FORMUSA: I have a transcript
22 undertaking that Panel 4 gave. It was assigned the
23 number Exhibit 267.2. I have eight copies for the Board
24 and I will provide Mr. Poch with copies as well.

25 THE CHAIRMAN: Thank you.

1 I am pleased to see that the panel is
2 here and the counsel are here and quite a few people
3 are here. I am asked to say that those who in the
4 future have difficulty in getting here can speak to Ms.
5 Morrison and we may be able to arrange some kind of
6 transportation for people who are having difficulty.

7 This sort of announcement reminds me of
8 the preacher at church who complains about the fact
9 that people aren't attending church.

10 If you have any problems -- the people
11 who need this message are the people who aren't here, I
12 suppose, but anyway, speak to Ms. Morrison.

13 MR. H. POCH: Thank you, Mr. Chairman. I
14 have provided the clerk, Mr. Chairman, with eight
15 copies of materials that I intend to refer to during
16 cross-examination and I provided most of those
17 materials to Mr. Campbell yesterday for review by the
18 panel and the remainder this morning which is just some
19 loose extracts. And perhaps at this time we could make
20 these materials exhibits.

21 The first document - maybe we won't make
22 it an exhibit - is just an outline setting out the
23 subject matter, the areas that I intend to
24 cross-examine on so that the panel and the Board may be
25 able to follow where we are going.

1 The only note that I would make there is
2 that No. 1, the demand management pyramid will follow
3 No. 8.

4 As to exhibits, Mr. Chairman, the large
5 document with the letter to Mr. Campbell dated
6 September 11, 1991, with the black Cerlox binding I
7 will be referring to as Volume 1 of my materials or the
8 exhibit number, and perhaps we can give this an exhibit
9 number.

10 THE REGISTRAR: That will be 290, Mr.
11 Chairman.

12 ---EXHIBIT NO. 290: Large document with the letter to
13 Mr. Campbell dated September 11, 1991,
 with the black Cerlox binding.

14 MR. H. POCH: The second document is
15 another letter to Mr. Campbell, dated September 12 with
16 the appended materials and it has got the reddish
17 Cerlox binding, the thin document and it says Volume 2
18 right on the document. I take it this will be Exhibit
19 291?

20 THE REGISTRAR: One second, please, Mr.
21 Poch.

22 MR. H. POCH: Yes, sir.

23 ---EXHIBIT NO. 291: Letter to Mr. Campbell, dated
24 September 12, with the appended materials
 with the reddish Cerlox binding.

25 MR. H. POCH: The third document has as

1 its first page a copy of page 52 in Exhibit 260
2 entitled, "Daily Generation Schedule", and at the top I
3 have handwritten in September 12, the DSP, Toronto,
4 Volume 3, cross-examination Panel 4. That will be
5 Exhibit 292.

6 ---EXHIBIT NO. 292: Copy of page 52 in Exhibit 260
7 entitled, "Daily Generation Schedule".

8 MR. H. POCH: The fourth document is an
9 orange sheet of paper with the heading, "Ontario
10 Hydro's Demand Management Pyramid. That will be
11 Exhibit 293.

12 THE REGISTRAR: You are going too fast
13 for me, please.

14 MR. H. POCH: I am sorry, sir.

15 THE REGISTRAR: The orange one will be
16 293?

17 MR. H. POCH: Yes, Mr. Clerk.

18 ---EXHIBIT NO. 293: Orange sheet of paper
19 entitled, "Ontario Hydro's Demand
Management Pyramid.

20 MR. H. POCH: The next document, Mr.
21 Chairman, will be a blue sheet of paper entitled, "The
22 Demand Management Pyramid". That will be Exhibit 294,
23 Mr. Clerk?

24 THE CHAIRMAN: Is this another demand
25 management pyramid?

1 MR. H. POCH: In blue. It will be a
2 different representation, sir. The orange one is
3 entitled, "Ontario Hydro's Demand Management Pyramid",
4 and the blue one is "The Demand Management Pyramid".
5 ---EXHIBIT NO. 294: Blue sheet of paper entitled, "The
6 Demand Management Pyramid".

7 MR. H. POCH: Mr. Chairman, as I have
8 advised Mr. Clerk earlier, the other documents that I
9 may refer to are Exhibit 257 and also yesterday's
10 transcript of proceedings, Volume 56.

11 Mr. Chairman, with me is Mr. Brian Kelly,
12 the principal with Marbek Resource Consultants Limited.
13 Mr. Kelly is an energy and environmental analyst and is
14 the program manager for the City of Toronto in respect
15 of this intervention by the City.

16 Mr. Kelly formally was an energy analyst
17 with the Federal Department of Energy, Mines and
18 Resources from 1974 through 1981 and he has
19 participated in what I would call forerunners to this
20 hearing, both the Task Force Hydro 1972 proceedings and
21 the Provincial Advisory Committee on Energy.
22 I believe Mr. Kelly will be present during the City's
23 case in-chief in 1992.

PAUL JONATHAN BURKE,
AMIR SHALABY,
MARION ELIZABETH FRASER,
LYN DOUGLAS WILSON,
WILLIAM OSBORNE HARPER,
IAN DUNCAN MacLELLAN; Resumed

CROSS-EXAMINATION BY MR. H. POCH:

Q. Panel, the first area that I would like to cover is what is now proposed by Ontario Hydro in the demand management area.

We have had floating targets brought forward from time to time, as you are aware. There have been different targets, especially with the fuel switch scenario coming forward in July and this latter two-month period. And I would like to clarify exactly at this time what is now proposed.

The first matter that I would like to clarify is not in the demand management area but is in the non-utility generation area. Mr. Chairman this is for clarification and it arises from Chairman Eliesen's speech to the IPPSO Annual Conference and Trade Show yesterday. I am looking at a document that Mrs. --

THE CHAIRMAN: Do we have that document yet?

MRS. FORMUSA: Mr. Campbell said yesterday that I was to bring copies today and I have copies here. ..

1 [10:15 a.m.] THE CHAIRMAN: Were you going to refer to
2 this speech extensively?

3 MR. H. POCH: No. I am not.

4 Q. I would just like for clarification,
5 panel, to confirm that the new target for non-utility
6 generation has moved from 2100 megawatts to 3100
7 megawatts. Are you aware of that?

8 MR. SHALABY: A. That's what was in the
9 speech.

10 Q. Is that Ontario Hydro's new position
11 that will be brought forward in Panel 5 of this
12 hearing?

13 A. I presume Panel 5 would be a better
14 position to handle that.

15 MRS. FORMUSA: Mr. Campbell - I don't
16 know if Mr. Poch was here yesterday - said this would
17 be a matter discussed at the scoping session on Monday.

18 MR. H. POCH: I am sorry, I didn't here
19 that.

20 Q. Moving to demand management, panel.
21 The first area of clarification that I would like from
22 you is to ascertain what the total potential demand
23 management reduction by the year 2000 will be? Is that
24 still 10,200 megawatts.

25 MR. BURKE: A. Yes, I think that was the

1 number given in the direct evidence for the sum of the
2 potential for electrical efficiency improvement, fuel
3 switching, load shifting and interruptible load. So
4 it's peak number.

5 Q. And is there is a potential demand
6 management reduction forecast for any other year beyond
7 2000, an actual number?

8 A. Yes, I believe there is. You would
9 like the number?

10 Q. Yes. If you don't have it at hand
11 perhaps --

12 A. Just a minute -- or I could get it
13 for you after the break.

14 Q. That would be fine.

15 A. I think all of the numbers are in the
16 direct evidence, but I will get you the number after
17 the break.

18 Q. Thank you.

19 As to total attainable demand management
20 reduction targets by the year 2000 is 5,200 megawatts
21 still the target?

22 MR. WILSON: A. Mr. Poch, when you say
23 still, can you tell me what you are thinking of?

24 Q. It is 5,230, pardon me, you corrected
25 the figure during the direct evidence, if I am not

1 mistaken.

2 A. That was the figure that we gave a
3 couple of weeks ago in direct evidence. I don't
4 understand what you are getting at when you ask
5 "still".

6 Q. I am looking for clarification before
7 I have move into my cross-examination that we are
8 dealing with the same numbers.

9 A. The only possibility that crosses my
10 mind is if there are some implications set for
11 non-utility generation that Mr. Eliesen gave yesterday
12 and I don't have that information. To the extent that
13 includes load displacement, non-utility generation --

14 Q. Aside from the NUG issue, are we
15 still looking at 5,230 megawatts?

16 A. Aside from the NUG issue, yes.

17 Q. Are there any further attainable
18 targets beyond the year 2000?

19 A. Yes, there are estimates of that.

20 Q. Would you confirm, during the break
21 also, those numbers?

22 A. Yes.

23 Q. I would just like to confirm that the
24 total attainable by the year 2000 is comprised of 2,230
25 megawatts by EEI, 1500 megawatts by fuel substitution,

1 and another 1,500 megawatts by load shifting off the 16
2 hour peak period.

3 MS. PATTERSON: What was the last figure?

4 MR. H. POCH: 1,500 megawatts.

5 MR. HARPER: Excuse me, I believe the
6 load shifting number for the year 2000 was 1000
7 megawatts. That's what we presented in our direct
8 evidence. And there was roughly another 700 megawatts
9 peak clipping through interruptible power.

10 MR. H. POCH: Q. So that would be DDS?

11 MR. HARPER: A. Yes.

12 MR. BURKE: A. Mr. Poch, did you say
13 1,500 megawatts for fuel switching?

14 Q. Yes, Mr. Burke.

15 A. I believe the number is 1,250
16 megawatts. And the EEI numbers are 2,230. That's the
17 values given for Scenario C3, that would exceed
18 slightly the 3,500 total for the sum of EEI in fuel
19 switching. But I think that gives you a pretty good
20 break out. That's given in Appendix C3 of Exhibit 258.

21 Q. I just to confirm that we are still
22 with the same numbers. As you have stated, Mr. Burke,
23 there has been no change to the basic load forecast.

24 THE CHAIRMAN: Just so I am clear, there
25 will be changes before this hearing is over, in fact,

1 there will be a new document coming out sometime either
2 late this year or early next year in which all these
3 figures will be reconsidered and may be revised.

4 MR. BURKE: Change to the basic load
5 forecast, for which year are you interested in, the
6 year 2000 and so on?

7 MR. H. POCH: Q. Yes?

8 MR. BURKE: A. Because there has been no
9 change to the long-term basic load forecast, but
10 earlier this summer in preparing for finalization of
11 rates there was a slight revision to the load forecast
12 for the years '94 to '96. They were lowered slightly
13 in response to expectation of higher rate increases
14 than previously anticipated. So, there is a slight
15 change for those years and the long-term forecast is
16 yet to be revised for the years beyond '96.

17 Q. When do you foresee any revision
18 occurring to the long-term forecast?

19 A. Well, that's actually something we
20 are discussing fairly intensively at this point right
21 now, because there is so much changing that we are not
22 quite sure at what point to cut things off and prepare
23 a few forecast.

24 My sense, though, is that the Chairman is
25 certainly correct that sometime later this year or

1 early next, we will have a new long-term load forecast.
2 Until then, I really can't say.

3 MR. H. POCH: Mr. Chairman, you do raise
4 an interesting scenario. I would just like to confirm
5 that if there are changes in the forecast related to
6 demand management as a result of demand management
7 matters, that the intervenors, especially the City of
8 Toronto, will have the opportunity to cross-examine
9 thereon later on.

10 THE CHAIRMAN: Well, that is an ongoing
11 problem and this is a dynamic hearing as I have said
12 and things change from day-to-day, so how that fits
13 into the process we will just have to consider. But
14 certainly there will be reasonable opportunity to
15 explore any changes of a significant nature that occur.

16 MR. H. POCH: I appreciate that, sir.

17 MRS. FORMUSA: Perhaps I might, in case
18 Mr. Poch wasn't here that day what Mr. Campbell spoke
19 to this issue. He did advise the Board that any
20 changes of any significance would be brought to the
21 attention immediately as we have done, but that the
22 whole package we hope to have by Christmastime to all
23 the intervenors. So, those were his submissions at the
24 time.

25 MR. H. POCH: Q. Mr. Burke, in coming to

1 the primary load forecast, has the long-term forecast
2 been changed as a result of the recent events in the
3 demand management area?

4 MR. BURKE: A. I think that's what I
5 just indicated. We haven't yet put together a new
6 basic load forecast.

7 Q. Primary load forecast.

8 A. I realize, but essentially, the
9 numbers that you would be subtracting from the basic
10 load forecast are the numbers we have just talked
11 about, the question is what is the basic load forecast
12 under the circumstances and current to today as opposed
13 to last fall when the 1990 basic load forecast was
14 finalized. So, the issue outstanding is do we have a
15 different basic load forecast, and to what extent can
16 we quantify or have we quantified well the values for
17 attainable EEI in fuel switching in all of the years,
18 not just the year 2000. And that is work that is yet
19 to be done, to be finalized.

20 Q. Mr. Burke, I am interested in the
21 process in setting of these potential and attainable
22 targets we have heard so much about, especially in
23 light of Mr. Eliesen's pronouncement about NUGs
24 yesterday in the proposed move from 2,100 to 3,100
25 megawatts and also with the fuel switch announcement

1 and increase in demand management as a result of the
2 potential fuel shift, when you are entering upon and
3 completing your load forecasting exercises, how do you
4 take into account pronouncements from the Chairman's
5 office of that nature?

6 A. Well, the just looking at this
7 particular one, in this case, the announcement about
8 fuel switching was made following the construction of
9 the scenarios that are presented in Exhibit 258, and
10 certainly the chairman was aware of the various
11 scenarios and effectively in announcing the target, he
12 was indicating commitment by the corporation to one way
13 or another deliver the megawatts that are roughly
14 equivalent to Case C. And my assessment of Case C from
15 a forecasting point of view, effectively has yet to be
16 made and it is contingent on, in my view anyway, it's
17 contingent on the extent to which we rely on government
18 policy to achieve the results, and whether or not it is
19 likely that the government actions that certainly the
20 ones that are implicit in Case C actually take place on
21 the schedule that is implicit in Case C or whether they
22 are alternative ways of achieving the same results
23 through other means that Hydro has within its control.

24 I think, my sense is, that with the fuel
25 switching option, 3,500 megawatt target is a feasible

1 result. Although certainly we are going to have to
2 make some decisions very quickly on the way in which
3 it's going to happen, or else we will be too late to
4 achieve this by the year 2000.

5 All that assessment is yet to come and
6 from the forecasting point of view I think it is
7 premature for me to really comment.

8 What we have before us in Exhibit 258 is
9 one feasible way of doing this. There are probably
10 others and this fall we will work through various
11 combinations, and I guess the next time when this
12 target is it first incorporated into a long-term load
13 forecast an assessment of whether it can be achieved
14 essentially will be part of the rationale for the
15 forecast.

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25 ...

1 [10:32 a.m.] Q. Mr. Chairman, I would like to move to
2 point No. 3 on my outline of cross-examination. Panel,
3 that is attainable demand management targets.

4 If I could turn to Exhibit 290, which is
5 Volume 1 of my materials, the thickest volume, and to
6 page 33, within that volume actually starting at the
7 bottom of page 32 of the volume.

8 Mr. Chairman, these are extracts from the
9 Ontario Energy Board Report dated August 26th, 1991, HR
10 20. That is the recent proceedings that were before
11 the OEB.

12 Has anyone on this panel had an
13 opportunity to review that report?

14 MR. WILSON: A. Yes, most of us, I
15 think, have had a look at this.

16 Q. In paragraph 3.3.16 which is found at
17 the bottom of page 32 and continuing at the top of page
18 33 in Exhibit 290, the OEB notes that Ontario Hydro
19 pointed out that the growing private sector activity in
20 research and development assures that there will be no
21 shortage of energy-efficient products and ideas.

22 Mr. Wilson, perhaps you are the person to
23 pose this question to.

24 Would you agree that a lack of product
25 will not cause a problem to Ontario Hydro in its

1 reaching its demand management objectives?

2 A. The availability of product is
3 crucial to our success in meeting our targets.

4 The Board's statement here, I think,
5 reflects a comment that I made at the Energy Board
6 hearing to the effect that they should not be unduly
7 concerned about Ontario Hydro's investment in product
8 research because the private sector, in effect, has the
9 motivation and the opportunity and the resources to
10 develop new and more efficient products and they are
11 better at it than we are.

12 And as I pointed out in direct evidence
13 before this Board, we see it as our job to facilitate
14 and foster that R&D work to include testing services
15 where necessary and to provide product demonstration
16 opportunities.

17 So, we see ourselves as very active in
18 the partnership with the private sector. It is by no
19 means a sanguine position on my part that we can lie
20 back and rely on the private sector to do it for us.

21 Q. But you would agree that the product
22 will be there to achieve your targets?

23 A. We are counting on it.

24 Q. If we could turn to page 90.

25 Mr. Chairman, this document starts at

1 page 89 of Exhibit 290 and it is a response to one of
2 AMPCO's interrogatories. It is Interrogatory No.
3 4.24.6. And at pages 90, 92 and 94 of Exhibit 290 for
4 the residential, commercial and industrial sectors,
5 from 1988 through 1990, various targets are described
6 and the amount of savings attained is also described
7 for those sectors.

8 Panel, were there any EEI targets in
9 1988? By this document it doesn't appear that there
10 were.

11 A. I don't believe so, no.

12 Q. When I look at page 90, I see that
13 the targets in 1989 and 1990 for EEI in the residential
14 sector were exceeded; is that correct?

15 MR. MacLELLAN: A. That's correct.

16 Q. And in the commercial sector at page
17 92, at the top for EEI, I note that the target was
18 achieved in 1990?

19 MS. FRASER: A. Correct.

20 Q. And at page 94, I note that in 1989,
21 the target was almost achieved in the industrial sector
22 and it was exceeded in 1990.

23 A. Correct.

24 Q. When will comparable data for 1991 be
25 available?

1 MR. WILSON: A. The information is
2 normally available at the end of February.

3 Q. And will that be provided through
4 these proceedings?

5 A. Yes, if that is a request of the
6 Board.

7 Q. It is a request.

8 MS. FRASER: A. We are currently
9 tracking ahead of target this year.

10 Q. And that will be provided, will it?

11 MRS. FORMUSA: We could provide it as a
12 transcript undertaking which may remain outstanding for
13 some time. That may be the best way to track it at the
14 moment.

15 MR. D. POCH: That would suffice.

16 THE REGISTRAR: Undertaking No. 267.9.

17 ---UNDERTAKING NO. 267.10: Ontario Hydro undertakes to
18 provide the 1991 demand management
19 results for all three sectors; and
provide a progress report to the end of
July.

20 THE CHAIRMAN: Perhaps while we are at
21 it, we should put this Interrogatory 4.4.6 in the 261
22 series. It is, in a sense, a double insertion, but it
23 might be of some help.

24 THE REGISTRAR: 261.38.

25 ---EXHIBIT 261.38: Interrogatory No. 4.4.6.

1 MRS. FORMUSA: Mr. Chairman, I think the
2 transcript undertaking, we have the next one as 267.10.
3 267.9 was a study of demand management rate impacts.
4 That is the last one that we have.

5 THE REGISTRAR: 267.10.

6 MRS. FORMUSA: That is what we have.

7 THE CHAIRMAN: Thank you.

8 Are you reconciled with the clerk now? I
9 didn't quite entirely follow that?

10 MRS. FORMUSA: Yes, we are reconciled.

11 THE CHAIRMAN: All right.

12 MR. H. POCH: Ms. Fraser, you said that
13 you are tracking ahead of the schedule for 1991.

14 Do you have any in-room figures?

15 MS. FRASER: A. Not off the top of my
16 head. I looked at the megawatt tracking chart last
17 night when I went through the office and it is a nice
18 graphical description and all the results were above
19 target on a trended basis, but I didn't jot down the
20 numbers.

21 Q. Could you provide that as soon as
22 possible?

23 A. Yes, I guess we could get it.

24 Q. And for what period would that be,
25 for the first half of 1991?

1 A. I believe that they are currently up
2 to the end of July.

3 Q. I would appreciate that as soon as
4 possible, please.

5 A. Okay.

6 MR. H. POCH: If we could make that part
7 of the same transcript undertaking, Mr. Chairman?

8 MS. FRASER: Well, we will probably have
9 it after - if not after break then after lunch.

10 MR. H. POCH: It is not necessary for
11 that.

12 MRS. FORMUSA: I think it is wise to make
13 it part of the same undertaking and then as we get to
14 the end of February next year, we will have all the
15 years attained.

16 MR. H. POCH: Q. Moving to the load
17 shifting targets and attainable that are reviewed in
18 AMPCO's interrogatory answer or to the answer to AMPCO,
19 at page 90 of Exhibit 290, we can see that in the
20 middle, just above the word "variances", residential
21 has no load shifting programs.

22 MS. FRASER: A. Correct.

23 Q. Okay. Page 92, for the commercial
24 sector, towards the bottom of the page, the commercial
25 sector targets are not met for your 1989 and 1990.

1 There was no target for 1988.

2 Mr. Burke, does this affect your forecast
3 load shift potential and attainable target?

4 MR. BURKE: A. Well, every year we
5 reconsider the long-term forecast for each of the
6 elements and we would be trying to rationalize the
7 extent to which these early results are indicative of a
8 long-term difficulty in meeting that original target,
9 or whether there are, as we have indicated before,
10 alternative programs which could be brought to bear to
11 achieve load shifting if, in fact, the response to
12 time-of-use rates should prove to be less than
13 anticipated.

14 So, that it is not simply a matter of
15 looking at the track record for year 2 and saying,
16 well, that means the original expectations were wrong.
17 We are really trying to learn from the experience and
18 there are other ways of achieving the same results.

19 So, that is being reconsidered at this
20 point because as you have observed, the time-of-use
21 rate impact has been less than anticipated, but there
22 could be many reasons for that. The recession could be
23 a significant element in that. There could be other
24 factors. So, we are thinking about it and it will be
25 part of the provision to the primary load forecast.

1 Q. But to date, you haven't changed your
2 forecast because of these findings?

3 A. No. The 1990 load forecast was
4 prepared before the 1990 results were out and the 1989
5 results really wouldn't have been a very good basis for
6 changing anything.

7 Q. Moving to page 94, the bottom half of
8 the page. For the industrial sector in 1988, it is
9 noted that no targets were set for load shifting in the
10 industrial sector, and I note that the industrial
11 sector target was exceeded in 1989 but it was not met
12 in 1990, Ms. Fraser?

13 MS. FRASER: A. That's correct.

14 Q. And again, I take it Mr. Burke, the
15 forecast has not been changed as yet as a result of
16 these figures?

17 MR. BURKE: A. No, and I guess what I
18 tried to include in my last answer was a sense that
19 while the tracking of targets and results in this
20 interrogatory response does give some interesting
21 indicators, it is not clear that one would necessarily
22 revise the forecast on the basis of these earlier
23 results.

24 And what I would point out, especially as
25 far as the earlier material, that the interrogatory

1 response asked for performance against gross targets
2 and so there is a separate issue of how we are doing
3 with respect to net load impacts.

4 DR. CONNELL: May I clarify? Is it
5 feasible to add together '89 and '90 to get a
6 cumulative total?

7 MR. WILSON: Yes, it is.

8 DR. CONNELL: There has not been any back
9 sliding in, for example, load shifting? If that had
10 been so, it would show up as a negative number, would
11 it?

12 MS. FRASER: That would have been
13 factored in to the 1990 numbers if there had have been.

14 MR. H. POCH: Dr. Connell, I will deal
15 with that issue momentarily.

16 Q. At page 95, panel, of Exhibit 290,
17 capacity interruptible load, which is now discount
18 demand service; is that correct?

19 MR. HARPER: A. Yes.

20 Q. Is reviewed in a different manner.
21 It really shows the analysis of success in meeting --
22 well, actually, the analysis of success in meeting
23 targets is not shown as for the load shift in EEI
24 matters.

25 There are percentages of total contract

1 demand set out in the Table 1 on page 95, and they, if
2 I am not mistaken, total 100 per cent; is that correct?

3 A. Yes.

4 Q. That is for 1989. Has the percentage
5 for each of the individual industries remained constant
6 during 1990?

7 A. Actually, I believe there was a
8 response to a City of Toronto interrogatory that
9 indicated what the breakdown of interruptible power was
10 by standard industrial classification or industry group
11 effective about March of 1991. If you want me to take
12 a minute, I can look up the number.

13 Q. I just want to know whether or not
14 the numbers changed from 1989 to 1990.

15 A. I don't think that they would have
16 changed significantly, no.

17 Q. Moving to the point that Dr. Connell
18 raised a minute ago - that is the total EEI in load
19 shifting for 1989 and 1990 - I will take it a little
20 further, Dr. Connell, if I may. I have, through my
21 calculator, added the figures in the various tables and
22 if I am as accurate as other counsel, hopefully you
23 will agree with me.

24 Ms. Fraser, for 1989, I get a targeted
25 total -- ...

1 [10:45 a.m.] THE CHAIRMAN: Is this for all three
2 sectors?

3 MR. H. POCH: Yes, sir. Actually it's
4 just energy efficiency improvements and load shifting.

5 THE CHAIRMAN: In all three sectors.

6 MR. H. POCH: Yes, sir. I get a total
7 targeted reduction of 147.6 megawatts.

8 MS. FRASER: I will take that subject to
9 check.

10 MR. H. POCH: Q. If you would confirm
11 this over the break, that would be fine.

12 MS. FRASER: A. 147.6?

13 Q. Yes. And as opposed to 134.6
14 megawatts that were achieved, this is for 1989?

15 A. 134.6.

16 Q. Yes. And my figures show that 91.2
17 per cent of the target was attained in 1989, that's the
18 cumulative EEI and load shift target in all sectors.
19 So, we have approximately 91 per cent attainment in
20 1989, if you would confirm that.

21 In 1990 my figures add up to a target of
22 204.2 megawatts, as opposed to 220.9 megawatts
23 attained, which is 108.2 per cent of the target, which
24 was attained in 1990.

25 A. I seem to recall those numbers.

1 Q. Okay. assuming those numbers are
2 correct or very, very close to being correct, for the
3 two years 1989 and 1990 together, I get a target of
4 351.8 megawatts, and a savings of 355.5 megawatts
5 attained.

6 A. 355.5.

7 Q. That being 101 per cent of the target
8 achieved for those two combined years. If you could
9 confirm that.

10 Is that your understanding at this time
11 that for the last two years the total combined target
12 has exceeded -- pardon me, the total savings have
13 exceeded the target for those two years?

14 A. Yes, and then building on the fact
15 that we are tracking ahead this year, that was the
16 basis for my statement yesterday, that we were ahead of
17 where we thought we would be.

18 Q. And this is the very early stage of
19 your demand management initiative at Ontario Hydro;
20 isn't it?

21 A. We started incentive programs January
22 3rd, 1989.

23 Q. And hopefully in time, with more
24 staffing, more experience and more money available,
25 more systems from municipalities and industry and the

1 end-use consumers, those targets will continue and may
2 even be exceeded by greater amounts. Do you see that
3 occurring?

4 A. We would sure love to see that
5 happening.

6 Q. Do you foresee that occurring?

7 A. I think there are a lot of things
8 have to happen in order to meet even the new targets
9 that we have now with the 5,200. 2,000 by 2000 was a
10 challenge.

11 Q. But to the end of July you are on
12 target?

13 A. Yes.

14 Q. Aside from fuel switching, which is
15 included in the 5,200, do you foresee achieving EEI
16 targets?

17 A. I foresee achieving them, yes.

18 Q. Good.

19 Mr. Chairman if we could turn to
20 transcript Volume 56, which was yesterday proceedings.
21 At page 9991 and continuing on to the next page, 9992,
22 starting at line 18 on page 9991, down to the middle of
23 line 17 on the page 9992, Mr. Burke, you were
24 discussing in the context of extending the Espanola
25 project province-wide, or the potential for that, that

1 the issue that you foresaw as a difficult issue was in
2 reaching demand management targets in the residential
3 retrofit area, and your concern primarily related to
4 the rate of delivery of demand management; is that
5 correct?

6 MR. BURKE: A. Well, I think at this
7 point in the transcript I was not expressing concern
8 about whether we could achieve the targets that we had
9 set ourselves, but simply whether the hypothetical that
10 was being posed, or implicitly was there, that one
11 could expand the Espanola project to serve all of the
12 province by the year 2000. That was a difficult thing
13 to achieve.

14 Q. I just wanted to be clear that that
15 was related to that hypothetical?

16 A. Yes. And the broad question of
17 whether the particular residential attainable EEI in
18 the forecast in the long run can be achieved, that I
19 have indicated, that is my best estimate of the
20 forecast.

21 Q. And likewise at page 9994,
22 Mr. MacLellan, you were discussing the same type of
23 hypothetical, and you were concerned about contractor
24 and material infrastructure problems. Do you recall
25 that?

1 MR. MacLELLAN: A. Yes, I do.

2 Q. And again, I take it your discussion
3 there was limited to that narrow hypothetical situation
4 of extending an Espanola project province-wide. That's
5 where you foresaw those problems?

6 A. Espanola-type project, yes.

7 Q. But you weren't talking in general
8 about having an adequate infrastructure in place to
9 achieve the EEI targets and the fuel shifting targets
10 that are now being brought forward?

11 A. No, I wasn't speaking that broadly,
12 at all.

13 MR. H. POCH: Mr. Chairman, I would now
14 like to turn to point 4 on my outline, environmental
15 issues. In particular, I haven't given this reference,
16 I apologized to the clerk earlier, it's Exhibit 3 that
17 I will be referring to now.

18 At page 7-7, starting at the last full
19 paragraph, and if I may read this into the record for
20 those that don't have the document.

21 The environmental characteristics of
22 demand management options themselves have
23 not been scrutinized as extensively as
24 supply options. Some of the potential
25 environmental effects relate to the

1 manufacture of energy efficient equipment
2 and to the disposal of inefficient
3 equipment. Preliminary estimates of
4 these effects, however, indicate that
5 they are negligible when compared to the
6 effects of producing the displaced
7 electricity through conventional
8 generation. The potential environmental
9 effects of demand management programs
10 need further study.

11 Panel, has Ontario Hydro estimated the
12 cost of the environmental characteristics of its demand
13 management options from both a cost and benefit
14 viewpoint, and then compared that estimated cost to the
15 cost of your supply options that are proposed?

16 MR. WILSON: A. No, we have not.

17 Q. Do you propose to do that?

18 A. We have no plans to do that at
19 present.

20 MR. H. POCH: If I may have a moment, Mr.
21 Chairman, to ascertain a reference.

22 Yes, panel, if you would now turn to
23 Exhibit 291, which is the volume with the reddish
24 Cerlox binding.

25 Mr. Chairman, starting at page 3, there

1 are extracts taken from the formal government review
2 which is Exhibit 146 in these proceedings, and at page
3 7 of Exhibit 291, from Exhibit 146 is a letter of
4 submission from director John Bray, the Ministry of the
5 Environment, to the EA branch of the MOE, and I have
6 extracted from the MOE environmental approvals branch
7 comments, pages 4, 5 and 11, which follow on page 8, 9
8 and 10 of Exhibit 291.

9 Mr. Chairman, do you have those pages?

10 THE CHAIRMAN: Yes. I think the exhibit
11 that this comes from is Exhibit 176, I believe.

12 MR. H. POCH: I thought this was 146 but
13 I may be wrong. This is the formal government review.

14 MRS. FORMUSA: 146.

15 THE CHAIRMAN: You are more likely to be
16 right. 146.

17 MR. H. POCH: Q. Panel, at the bottom of
18 page 8 of Exhibit 291, and running on to the top of
19 page 9, the MOE approval branch has made several
20 comments, and again for the benefit of those who don't
21 have the document in front of them, I will read this
22 into the record.

23 The alternatives of greater attention
24 being given to conservation and improved
25 electrical efficiency have not been

1 sufficiently documented in the EA.

2 Ontario Hydro acknowledges that demand
3 management is difficult to incorporate
4 due to it's great potential for
5 variability. However, energy demand
6 management and the more efficient use of
7 present energy supplies provides the best
8 hope of reducing adverse impacts on the
9 natural and social environment. Even
10 greater attention should be devoted to
11 decreasing demand, making greater use of
12 more electrically efficient products and
13 conservation strategies. For example,
14 what if \$1.3 billion, the cost of the
15 Manitoba purchase, were instead
16 investigated in providing electrical
17 users with energy efficient and energy
18 saving equipment, what would be the
19 environmental benefits and avoided
20 capacity costs?

21 Panel, has Ontario Hydro responded to
22 that question about the \$1.3 billion, and particularly,
23 has Ontario Hydro studied what the environmental
24 benefits and avoided capacity costs would be if one
25 \$1.3 billion were instead invested in providing users

1 with energy efficient and saving equipment?

2 MR. WILSON: A. Mr. Poch, I believe
3 there was a response to a Ministry of Environment
4 interrogatory, and I'm sorry, I can't recall it at the
5 moment, but I would check that.

6 Q. If you would.

7 A. In answer to the second part of your
8 question, have we examined the environmental benefits
9 and avoided capacity costs of investing \$1.3 billion
10 in -- what does it say here?

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25 ...

1 [11:02 a.m.] Q. In providing users with
2 energy-efficient and saving equipment.

3 A. Sure. Instead of buying power from
4 Manitoba, no, we have not done that. What we have done
5 is outline a program for demand management which is as
6 aggressive as we think can be accomplished in Ontario,
7 subject to the constraint that the actions be economic
8 within the definition of the total customer cost test.

9 Q. At pages 11 and 12 of Exhibit 291,
10 panel - this is an extract, Mr. Chairman, from Exhibit
11 25, and particularly pages 4 and 5 of Exhibit 25. A
12 five-step process is set out here which Ontario Hydro
13 followed in determining attainable energy efficiency
14 improvement load savings from 1990 to 2014.

15 Panel, does this process scrutinize the
16 environmental characteristics of demand management
17 options?

18 A. The scrutiny that the options receive
19 is very definitely part of the screening of
20 technologies. I am not aware of any technologies which
21 were excluded because they were environmentally
22 unsuitable.

23 Now, we have, since the Demand/Supply
24 Plan when Exhibit 3 was created, commissioned two
25 studies to examine the environmental effects, in

1 particular, one which we provided in response to
2 Interrogatory 4.20.27, explored the environmental
3 consequences of the demand management measures. And it
4 will be our judgment that the statements made in the
5 plan would state that the environmental effects of
6 demand management programs or measures are small
7 compared to supply, was substantiated by the findings
8 of that report.

9 Q. As to this process?

10 A. Yes.

11 Q. Set out on these two pages in Exhibit
12 25, did that process at that time scrutinize the
13 environmental characteristics of demand management
14 options?

15 A. We had very little information.

16 Q. Yes or no, sir?

17 A. Well

18 MR. BURKE: A. I think what Mr. Wilson
19 said is largely correct, that there were considered to
20 be no particular negative side effects of the demand
21 management measures included in the process outlined
22 here, but whether the environmental effects were
23 specifically analysed and attempts were made to
24 quantify any of the side effects they did have, the
25 answer is no, at that time.

1 Q. Now, we have this document, those
2 pages in Exhibit 25; we have Exhibit 76, which was is
3 the update; we have the PCRD which are the volumes of
4 materials setting out the programs, Ms. Fraser?

5 MS. FRASER: A. Yes, that's correct.

6 Q. And we have those two studies, Mr.
7 Wilson, that you just referred to: The supply side and
8 demand side studies of environmental effects which were
9 referred to in answer to our interrogatory and which
10 are exhibits in this hearing now.

11 On my review of all of those documents, I
12 see a superficial at best analysis of environmental
13 effects related to demand management options.

14 Would you agree with my characterization?

15 MR. WILSON: A. No, I would not.

16 Q. In your mind, what would a
17 superficial analysis of environmental effects be?

18 A. It is your characterization.

19 Q. I am asking you in your mind what
20 would the superficial analysis have been?

21 A. It is, I guess, a question of degree.
22 If you relied on your own opinion without seeking any
23 external evidence about the environmental effects, then
24 I would think that would be truly superficial, but the
25 range of possibilities for superficial just boggles the

1 imagination.

2 Q. I noted, though, that in your two
3 reports, the supply side and the demand side reports to
4 do with environmental effects, if I am not mistaken,
5 both of them said that further studies should be
6 undertaken.

7 A. Yes, that is true.

8 Q. And it hasn't been, has it?

9 A. Yes, it is being.

10 Q. It is being, but it hasn't been
11 brought forward yet at this hearing, has it?

12 A. Well, I guess there are two questions
13 here: One can debate the environmental effects of all
14 conceivable demand management products. And we had an
15 extensive discussion of some of the new and exciting
16 products that are emerging in Competetik reports and we
17 discussed that yesterday.

18 I think it is very safe to assume that
19 Ontario Hydro has no indepth analysis of Amory Lovin's
20 new products.

21 We have, on the other hand, or we have
22 put programs together examined rather carefully what
23 the environmental implications are and taken steps in
24 program design to deal with those. And I believe my
25 fellow panelists are on record as to steps they have

1 taken and the outcomes of those steps.

2 Q. I am not disputing what steps may
3 have been taken, but perhaps, Ms. Fraser, on my reading
4 of the PCRD which sets out those programs, throughout
5 those documents when we are looking at the individual
6 programs, there are references to further necessary
7 study of environmental effects for each of those
8 programs. They are mentioned right in that PCRD;
9 is that correct?

10 MS. FRASER: A. Not for every one, I
11 don't think.

12 Q. No, but a large number of them.

13 A. The process that we have put in place
14 in terms of program development is we do an initial
15 screening of the concepts. At that time, we look at
16 sort of a quick and dirty cost benefit; we screen the
17 market considerations; we screen the environmental
18 considerations and the technical considerations.
19 Obviously, if something isn't technically feasible or
20 cost-effective, it is kicked back.

21 With respect to environmental issues or
22 market considerations, that then determines some of the
23 action that we might have to take in conjunction with
24 the program as we develop it.

25 That program development process was put

1 together and formalized after the document indicated
2 here, which is in Exhibit 25, and that process is
3 internal to the Energy Management Branch. This
4 estimation and the assessment of the net load impact
5 forecast is a joint effort between economics and load
6 forecast and energy management.

7 The two studies that Mr. Wilson referred
8 to that were done subsequent to these other documents,
9 I think, represent our best sort of overall work at
10 this point. And I think it is important to recognize
11 that there are various levels at which you can do any
12 of this work. What the PCRD does not include is
13 minutes of meetings with the Ministry of the
14 Environment officials on the PCB issue with respect to
15 street lighting and all that sort of program operation
16 kinds of things.

17 The PCRD is a concept sort of thing and
18 to the point at which it is approved from a cost
19 benefit point of view as a program and then moved on.
20 There is a lot of program operations that go on after
21 that as we work things out, negotiations our field
22 staff do with the field represents from the Ministry of
23 the Environment, if that that is required and so on.

24 MR. WILSON: A. An example of work that
25 we have done and is ongoing, we have already discussed

1 and, I believe, tabled in evidence the studies that
2 have been done on indoor air quality where the sealing
3 of houses or draft proofing and so on is an efficiency
4 measure we are looking at.

5 And we have already described at some
6 length the working done on right now on a pilot basis
7 with the buying back of refrigerators or second
8 refrigerators so that we can make sure that can be done
9 in a way that recovers the CFCs that are in the
10 refrigeration circuit and the PCBs that are in the
11 electrical part of the refrigerator, and also to deal
12 with the landfill issue of disposal of old
13 refrigerators.

14 Where we are aware of problems, we are
15 acting on them and we are acting on it before we put
16 programs in the field. I think that is the best we can
17 do.

18 Q. I appreciate that. If we could now
19 turn to page 60 of Exhibit 290.

20 Mr. Chairman, this is an extract from the
21 supply side of the environmental effects document which
22 we have just made reference to, which is part of the
23 answer to 4.20.27.

24 Mr. Wilson, and the conclusions are set
25 out on page 60, the conclusions of that report. And it

1 states that:

2 "Generally, demand management options
3 have favourable supply side effects".

4 And the next paragraph:

5 "The multiple benefits of demand
6 management makes its integration into
7 utility planning well worth the effort.
8 Demand management programs have the
9 ability to achieve multiple environmental
10 objectives and deal with more than one
11 environmental problem at one time; for
12 example, savings in acid rain control and
13 secondary benefits of reducing global
14 warming more cost-effectively than any
15 other acid rain control strategy".

16 I take it that is still your position?

17 A. Yes, it is.

18 Q. Okay.

19 MR. SHALABY: A. It is really extracted
20 from an EPRI report. So, I think that statement is a
21 straight lift, the idea of reducing CO(2) more
22 cost-effectively than any other acid gas control
23 strategy or acid rain, that is an EPRI lift.

24 I think a reduction of acid rain
25 emissions varies with utilities and varies with the

1 method of control and times and so on. It is very
2 difficult to say what is the most effective way of
3 reducing acid gas emissions.

4 Q. But, Mr. Shalaby, you would agree
5 that that conclusion set out on that page is still
6 applicable; that is Ontario Hydro's position?

7 A. What I am saying, it is not Ontario
8 Hydro's conclusion. It is a lift from an EPRI,
9 Electric Power Research Institute study.

10 Q. But this document has been presented
11 to this tribunal.

12 A. I beg your pardon?

13 Q. This document with this conclusion in
14 it has been presented to this tribunal as one of the
15 two documents studying environmental effects on various
16 programs.

17 A. This document is being presented. I
18 am just putting the conclusion in context. I am saying
19 it is a quote from a research document that is done by
20 EPRI.

21 Q. So you are not disagreeing this is
22 Ontario Hydro's position?

23 A. In a way I am saying that the
24 sweeping conclusion that demand management is a most
25 cost-effective acid rain controlled mechanism is too

1 generalized. There could be other options that may be
2 more cost-effective in different utility areas and in a
3 different situation. That is all.

4 Q. Do you have any documentation to
5 support your statement that you have made?

6 A. We have presented acid gas control
7 costs and options in various exhibits, the plan
8 analysis document, for example, which is Exhibit 6, has
9 incremental costs of removing SO(2) emissions.

10 And it is really a common sense thing
11 because you could have a very expensive demand
12 management option that reduces coal emissions by a very
13 small amount. That will be a very high incremental
14 cost of removing emissions.

15 The other point to keep in mind is that
16 you implement demand management for many, many reasons,
17 not necessarily just to control acid gas emissions.

18 Q. No.

19 A. Just another benefit. All I am
20 saying is I am not sure whether the oversweeping
21 conclusion that it is the cheapest way of doing the
22 job, I cannot agree with that.

23 Q. Mr. Wilson, you don't have any
24 difficulty with that conclusion, do you, that
25 generally, demand management options have favourable

1 supply side environmental effects, and that the
2 multiple defense benefits of demand management makes
3 its integration in the utility planning well worth the
4 effort?

5 MR. WILSON: A. I certainly agree with
6 that. I do have to state that I don't have sufficient
7 knowledge of alternative acid gas or greenhouse gas
8 emission control strategies to support the broad
9 statement that demand management is the most
10 cost-effective way of doing things, and I support Mr.
11 Shalaby in that caveat.

12 Q. All right. Moving back to page 51 of
13 Exhibit 290 and onto page 52. Mr. Chairman, these are
14 extracts from the other study that Mr. Wilson referred
15 to a few minutes ago. This is the Haites and Mauldin
16 study dealing with the environmental impacts of demand
17 management options. And the conclusions are found at
18 the bottom of 51 and continuing at the top of 52 and
19 they state briefly:

20 "The environmental impacts due to the
21 manufacturer, use, decommissioning and
22 disposal of products and materials
23 associated with Ontario Hydro's current
24 and proposed demand management measures
25 are generally less than the impacts that

1 would be experienced in the absence of
2 those measures given that suitable
3 mitigation efforts are implemented."
4 I take it, Mr. Wilson, that you concur
5 with that still?

6 A. Yes.

7 Q. Now, the negative impacts arising
8 from demand management programs, panel - not the
9 positive impacts, but the negative impacts - if an
10 accelerated demand management program had not been
11 instituted, would the negative environmental impacts
12 have occurred in due course in any event when
13 appliances ran their shelf life.

14 MR. MacLELLAN: A. In the case of
15 appliances and fridges specifically, this is an area
16 where a demand management program can actually improve
17 the disposal of refrigerators because right now
18 municipalities handle it in a variety of ways and the
19 design of the program is such that it can improve the
20 situation.

21 The other example, I guess, I can think
22 of is that of indoor air quality. Trying to find out
23 the current state of indoor air quality in the homes
24 you are about to seal up is a very expensive measure
25 and that is an area where the people may or may not

1 have sealed up there homes on their own. They
2 certainly wouldn't do as good a job as professionals do
3 in a whole house sealing program. So, that is a case
4 where you would have to take a lot of time and cost to
5 ensure the air quality isn't degraded.

6 Q. So, in effect, a lot of these
7 programs really centralize difficult issues, difficult
8 environmental problems and allow you to bring into play
9 a comprehensive structure to deal with environmental
10 problems that would occur in due course; is that
11 correct?

12 A. Some of them do, yes.

13 Q. Okay. Panel, at page 68,
14 particularly Ms. Fraser, at page 68 of Exhibit 291,
15 just going back to the PCRD.

16 This is an extract, Mr. Chairman, from
17 Appendix 2, page 22, and it sets out some technical
18 definitions that were used throughout the PCRD.

19 And at the top, Ms. Fraser, we have
20 qualitative ranking matrix. And it states that:

21 The program concepts are screened
22 according to technical and marketing
23 criteria. Technical criteria include
24 maturity of the technology, economic
25 attractiveness and persistence and

1 dispatchability. Market criteria
2 include potential impact and penetration
3 rate, lost opportunities and free riders.
4 I don't see the word environment there.

5 MS. FRASER: A. No, it is not there;
6 however, I sit on the Concepts Screening Committee and
7 that is one of the things that we do look at. So I am
8 not sure why it is missing from this statement.

9 Q. Thank you.

10 Mr. Chairman, if we could turn to Exhibit
11 292, which is Volume 3 of the materials that I provided
12 this morning, and the first page.

13 Mr. Shalaby, I believe, you made
14 reference to this numerous times throughout the
15 proceedings.

16 MR. SHALABY: A. Yes.

17 Q. We will go back to it again. And if
18 you could just very briefly refresh me as to what this
19 shows.

20 A. This shows, conceptually, the order
21 of dispatch, as we call it, or scheduling of the
22 generating sources in a typical day. It shows that the
23 first thing we resort to is usually hydraulic and
24 nuclear base-loaded generation and then we dispatch or
25 schedule fossil generation to meet demand that exceeds

1 the base load.

2 Q. Would that be coal generation, sir?

3 A. Typically, coal and some oil. And
4 then peaking generation on top is typically peaking
5 hydraulic that is scheduled to, what we call, peak
6 clipping, to do a peak clipping job to reduce the very
7 peaky periods of the day.

8 Q. Now, this is a graph based on a
9 winter day; is that correct?

10 A. It is.

11 Q. It is a twenty four hour graph. I am
12 just wondering, I look at the off-peak hours which are
13 based on the time coordinate of zero through to, I
14 would say, what, approximately six, seven?

15 A. Seven.

16 Q. Seven in the morning. If there was
17 to be conservation during that off-peak period, I take
18 it then the amount of coal generation, the fossil
19 generation that is shown on this graph would be
20 reduced; is that correct?

21 A. Yes.

22 Q. And accordingly, that reduction would
23 reduce air emissions from those coal-fired facilities,
24 correct?

25 A. Yes.

1 Q. So, that it is a worthwhile goal then
2 to seek as much conservation during off-peak hours as
3 possible for that reason, is that correct? Would you
4 agree with that?

5 A. Yes, subject to all the other tests
6 and viabilities and everything else, yes.

7 Q. From an environmental standpoint
8 though. I am limiting my question.

9 A. If that was your singular criteria,
10 yes.

11 Q. And during the peaking hours where
12 conservation is employed, what systems are backed off?

13 A. Again, typically fossil generation.

14 Q. Hydraulic also, I take it, would be
15 during the peaking period?

16 A. Well, it is rescheduled, hydraulic.
17 We use the water that we have access to during the year
18 at one time or another, so the impact trickles down to
19 reducing the fossil generation; to maximize nuclear and
20 hydraulic and the slack is picked up by fossil.

21 MR. H. POCH: May I have a minute, Mr.
22 Chairman?

23
24
25 ...

1 [11:25 a.m.] Mr. Chairman, my next question refers to
2 a transcript volume that I haven't directed the clerk
3 to, and perhaps this would be an appropriate time for
4 the break.

5 THE CHAIRMAN: All right. We will break
6 for fifteen minutes.

7 MR. H. POCH: At the resumption I will be
8 referring to Volume 47.

9 THE CHAIRMAN: Volume 47. Thank you.

10 THE REGISTRAR: This hearing will recess
11 for fifteen minutes.

12 ---Recess at 11:27 a.m.

13 ---On resuming at 11:45 a.m.

14 THE REGISTRAR: Please come to order.

15 MRS. FORMUSA: Another administrative
16 matter. Mr. Wilson made reference to Interrogatory
17 4.20.27 and it was not assigned an Exhibit 261 number.
18 So, we have checked with Mr. Lucas it is Exhibit 261.39

19 THE REGISTRAR: 39, yes.

20 THE CHAIRMAN: I wrote down 4.20.24 and
21 thought I made a mistake, it was 4.2.24, but I guess...

22 MRS. FORMUSA: There were two referred to
23 this morning, the first one was 4.24.6, and the second
24 one was 4.20.27.

25 Can you confirm that, Mr. Wilson, perhaps

1 before we proceed?

2 MR. H. POCH: Mr. Chairman, I can confirm
3 that 4.20.27 is the interrogatory that appends the two
4 environmental effects reports.

5 THE CHAIRMAN: They should added as
6 suggested.

7 MRS. FORMUSA: Thank you.

8 ---EXHIBIT NO. 261.39: Interrogatory No. 4.20.27.

9 MS. FRASER: I just wanted to say, I
10 confirmed Mr. Poch's math and he gets an A plus.

11 The 1991 results, the target trended to
12 the end of July was 120.6 megawatts, the results to the
13 end of July were 161.7 megawatts, and that's running at
14 134 per cent of target.

15 MR. WILSON: Mr. Poch, you asked what the
16 projection for the year 2015 for Case C would be, and
17 its 6,820 megawatts for the year 2015.

18 THE CHAIRMAN: Mr. Wilson, would you
19 repeat that figure, please.

20 MR. WILSON: 6,820.

21 MR. H. POCH: Q. That is attainable?

22 MR. WILSON: A. Attainable of fuel
23 switching plus EEI.

24 MR. BURKE: A. I just want to add a
25 caveat to that number which was read into the

1 transcript before when your brother, David Poch, asked
2 a similar question and we gave the same number
3 previously, and that is that these were preliminary
4 estimates, extrapolated in a very simplistic way from
5 the year 2000 number, and they are something that we
6 are looking at more intensively.

7 In fact, it's one of the reasons I can't
8 answer the question you asked me which was about the
9 potential, because we have not, in fact, got a
10 potential for fuel switching in the year 2015 at this
11 point. We have simply extrapolated the attainable
12 results using the same patterns we had used for the EEI
13 numbers.

14 However, if you are interested in what we
15 do have, in 2015 we had estimated the potential for EEI
16 prior to the exercise for the fuel switching at 8,900
17 megawatts, load shifting was 1,390 megawatts, and there
18 is about 900 megawatts of DDS implicit, which adds up
19 to 11,190 megawatts of potential without the
20 consideration of fuel switching.

21 MR. H. POCH: Q. Thank you, Panel.

22 THE CHAIRMAN: I'm sorry, 8900 is what?
23 Is that EEI?

24 MR. BURKE: That was EEI pure and simple
25 without --

1 THE CHAIRMAN: And 1,390 is load
2 shifting?

3 MR. BURKE: That's correct.

4 MR. H. POCH: Thank you, Panel.

5 Q. Mr. Shalaby, moving back to where we
6 were before the break, and we were referring to Exhibit
7 260 on page 52, and I was going to refer you to - and I
8 will now refer you to - Volume 47 of the transcript at
9 page 8400, Mr. Chairman.

10 Starting at line 18 on page 8400 and
11 continuing on to page 8401, and that states, Mr.
12 Shalaby:

13 "QUESTION: And do all demand
14 management options sense have similar
15 impacts on the use of the existing system
16 and the need for expansion?

17 I believe this was your answer:

18 "ANSWER: No, they don't. And here,
19 really, we are going over material that
20 we have covered before in the different
21 panels, but to recap, different options
22 have different impacts on the electricity
23 system.

24 For example, options that save
25 electricity during peak hours, or mostly

1 during peak hours, would have a greater
2 reduction in the use of fossil fuels, for
3 example, than options that operate mostly
4 during off-peak hours."

5 I would like to be clear about your
6 statement before the break that both peak hour and
7 off-peak hour conservation will reduce the use of
8 coal-fired generating stations.

9 MR. SHALABY: A. Applied to the graph
10 that you supplied, the figure that you supplied is a
11 winter peak day as you shown. In that case, peak and
12 off-peak have fossil fuel generation on every hour of
13 the day. There are many days of the year where fossil
14 generation is confined to only the peak periods.

15 The spring and the fall particularly have
16 many, many hours of the day where there is no fossil
17 generation whatsoever. There may be days on end
18 without any fossil generation in certain rare
19 circumstances. But definitely in the off-peak periods
20 you will find fossil generation restricted to peak
21 periods.

22 Q. But in the winter period, which is
23 the peak period for Ontario Hydro --

24 A. We could get weekends where fossil
25 generation is low. So, I am saying, the evidence that

1 I have gave is correct in the sense of you save more
2 fossil fuel on peak than you do off-peak because many
3 days have no fossil generation off-peak.

4 Q. But, it would be wise to attempt to
5 conserve your off-peak demand as much as possible also.

6 A. I agree with that, yes.

7 Q. And then moving to the summer, when
8 demand is not as high on a province-wide basis as in
9 winter, you would agree with that; correct?

10 A. Yes.

11 Q. Would a kilowatthour of conservation
12 say in air conditioning result in reduced coal use in
13 the Hydro system and in reduced air emissions
14 associated with the use of coal?

15 A. It would. Most of the time it would.
16 There may be the odd hours, as I say, that it displaces
17 non-fossil fuels. But generally in the summer, while
18 it is less than winters, fairly high demand still.
19 It's really spring and fall that are much lower than
20 either of those.

21 Q. So, a kilowatthour of conservation
22 during summer is really just as valuable as in winter
23 from an environmental point of view; isn't that
24 correct?

25 A. It reduces air emissions, yes.

1 What it doesn't do as much as reduce the
2 need for expansion, facility expansion. It may also
3 not be reducing oil generation; it maybe reducing coal
4 generation, and whether that's more or less valuable
5 than wintertime reduction, I don't know.

6 Q. I take it, Mr. Burke or Mr. Shalaby,
7 in your demand reduction projections through demand
8 management programs, you really haven't even looked at
9 the use of air conditioning as a potential source of
10 demand management reduction, have you?

11 A. Yes, we have gone through that
12 earlier.

13 Do you want us to go through it again?

14 Q. No, I just want to know very briefly.

15 A. I think Mr. Burke's evidence was that
16 it is not in the list of potential measures, that is
17 documented in Exhibit 76 or Exhibit 25.

18 Q. Okay. And during the 1990s, what
19 portion of the time will there be no coal use on the
20 system?

21 A. Well, we can go back to my second
22 most favourite diagram, and that is the incremental
23 fuel use on the system, and that's in Chapter 6, I
24 think, in Exhibit 3. That shows you the per cent of
25 time different fuels are in margin. That gives you an

1 idea of how often.

2 Q. I am looking for a general
3 percentage, an approximate percentage.

4 A. All right. It's probably 16, not 6,
5 I'm sorry. Page 16-7, Exhibit 3, shows the incremental
6 energy proportions by fuel type.

7 Q. 16-3, did you say, sir?

8 A. 16-7.

9 Q. 16-7. Coal is shown in red?

10 A. Shown in red. So any time, you don't
11 see red, you will see coal.

12 So, there is a large percentage of time,
13 for example, in the upper right-hand corner of the
14 diagram that coal is not the marginal fuel in the
15 summer off-peak. Whereas, in the winter peak, which is
16 the lower left-hand corner, you see that either coal or
17 oil and gas are in margin all the time. So, during the
18 winter peak periods you have got a fossil fuel on
19 margin all the time, summer peak period you have got
20 fossil fuel most of the time as well.

21 So, that gives you an idea of how often
22 different fuels are in margin.

23 Q. To be clear then, in the summer
24 period, for instance, in the City of Toronto which is
25 the summer peaking area, it doesn't have a winter peak

1 but a summer peak, as much conservation as possible in
2 the use of air conditioning and cooling measures would
3 be beneficial to the environment?

4 A. Yes.

5 Q. Would you agree?

6 A. Yes.

7 MR. H. POCH: Mr. Chairman, if I may now
8 move to point 5 on the cross-examination outline,
9 Resource Materials.

10 Q. And, Mr. Wilson, directly over your
11 right shoulder are the three Competitek volumes, the
12 red spined volumes.

13 MR. WILSON: A. Yes.

14 Q. And they were referred to yesterday
15 in Mr. Greenspoon's cross-examination as you will
16 recall.

17 A. Yes.

18 Q. And I take it that you intend to
19 continue that subscription as it's a worthwhile
20 subscription; is that correct?

21 A. Yes.

22 Q. And, Ms. Fraser, are you aware of who
23 the editor of that document was until fairly recently?
24 Ted Flanagan?

25 MS. FRASER: A. No, I'm not.

1 Q. Are you aware that Mr. Flanagan is
2 one of the City's consultants?

3 A. No, I didn't know. That's
4 interesting. Is he getting a piece of the action?
5 (laughter)

6 Q. We all have our rates!

7 A. I know. One of my staff is going
8 down to the Competitek conference this year.

9 MR. H. POCH: Mr. Chairman, moving on to
10 the next point, and that's No. 6.

11 And I must caution you panel, especially
12 Mr. Shalaby who asked me how fast we were moving, that
13 the numbers on this outline don't represent necessarily
14 the length of time that I would spend on each. But I
15 do caution you that the larger the number, the more
16 time there may be spent on each of those.

17 MR. SHALABY: We are back to non-linear
18 again, are we?

19 MR. H. POCH: That's right.

20 Q. No. 6, I would like now to focus on
21 the City of Toronto involvement in demand management
22 programs, Ms. Fraser.

23 MS. FRASER: A. Yes, Mr. Poch.

24 Q. A number of times you have described
25 various programs that the City has been involved with

1 in the demand management area and others that you would
2 have liked to see the City involved with.

3 A. That's correct.

4 Q. Are you aware that the City has been
5 performing in-house energy audits since 1977?

6 A. Yes, I am.

7 Q. And are you aware the number of
8 buildings and square footage that have been involved?

9 A. No, I don't. I am not familiar with
10 those numbers.

11 Q. And you are not aware of which
12 buildings, I take it, then either?

13 A. No.

14 THE CHAIRMAN: When you say "in-house",
15 you mean City of Toronto-owned buildings; is that what
16 you mean?

17 MR. H. POCH: Yes, Mr. Chairman.

18 MS. FRASER: I am not aware to date that
19 any applications have been made for incentives through
20 Hydro's programs, but I maybe a little out of date on
21 that.

22 MR. H. POCH: Q. But that doesn't
23 necessarily mean that the City would apply for
24 incentives in every program that it undertakes; does
25 it?

1 MS. FRASER: A. Oh, no. Hopefully there
2 are lots of things they are doing on their own.

3 Q. As to the City's energy conservation
4 program, are you aware that it has been part of the
5 City's capital budget process since 1981?

6 A. No, I wasn't aware of the actual time
7 and details of it.

8 Q. So you are not aware of the quantity
9 of the appropriations over the last decade and how the
10 money would have been used?

11 A. No.

12 Q. You obviously wouldn't be aware of
13 the amount of energy savings that may have been
14 accomplished through these energy conservation
15 programs?

16 A. No, but rather they are there. And I
17 am aware that the City has been involved for, I think,
18 over 13 years with the City's Energy Forum, the
19 Downtown Energy Forum sponsored jointly with the BOMA
20 and the Ministry of Energy, and that's something that
21 Ontario Hydro has participated in and they have very
22 successful in encouraging other savings as well.

23 Q. Now, the MUNIES have been referred to
24 as allies--

25 A. Yes.

1 Q. --of Ontario Hydro in the demand
2 management area.

3 A. Correct.

4 Q. Would you look at the City of Toronto
5 also as an ally in that area?

6 A. Yes. I think I indicated in my
7 direct all levels of government can be allies, and I
8 think I gave Burlington as an example, as let's put
9 something into their development process with respect
10 to our programs and also the City of Toronto in terms
11 of it's aggressive energy plan developed by the Special
12 Advisory Committee on the Environment.

13 Q. So, I take it that you would agree
14 that energy savings that may be accomplished through
15 the municipal programs, not the MUNI programs, but the
16 municipal programs would be of benefit to your load
17 savings programs?

18 A. Yes, but insofar as some of those
19 savings have been ongoing for a while, and Mr. Burke
20 probably captures some of those in his basic load
21 forecast.

22 Q. Mr. Burke, have they? Are they being
23 captured?

24 A. As a trend, not explicitly.

25 MR. BURKE: A. The latter is correct.

1 Q. Did you hear the question, Mr. Burke?

2 A. Yes, I certainly did.

3 Q. I am just wondering because you
4 looked a little frustrated there for a second.

5 A. It's always difficult when things are
6 sort of small trend effects that people would like me
7 to have exact numbers for the last 13 years.

8 Q. No, I wasn't asking for an exact
9 number, though.

10 A. No, but sometimes people do.

11 Q. Ms. Fraser, aside from the City of
12 Burlington, and the City of Toronto, are you aware of
13 any municipalities that have had audits undertaken
14 within their own buildings, city-owned buildings or
15 municipally-owned buildings, and having had those
16 audits implemented through energy conservation programs
17 and through their individual budget processes?

18 MS. FRASER: A. Are you talking about
19 our power saver audit programs or their own....

20 Q. Their own.

21 A. I believe there are now either 15 to
22 18 cities on the City's Energy Forum process to the
23 Ministry of Energy which have energy conservation
24 coordinators usually paid on a part-time basis by
25 either of the Chamber this Commerce or some other local

1 group which provides some overall coordination and do
2 some audits. Our local field staff do coordinate with
3 them, with those coordinators, if possible.

4 We have done quite a number of energy
5 audits for municipalities under our power saver program
6 plan, and I know that the Ministry of Energy program,
7 it's initials MB, I am trying to think of what it
8 stands for, municipal building energy efficiency
9 program, and that's to provide financial assistance to
10 to small cities in Ontario.

11 So, I don't have a quantitative fix on it
12 all, but I do have a general idea of some of the things
13 that are going on.

14 Q. So when we look at municipalities and
15 their potential energy conservation programs savings
16 over the, let's say, the next decade, Ms. Fraser, I
17 take it then that there is a substantial demand
18 reduction that will be arrived at through those ECPs?

19 A. Through the which, sorry?

20 Q. Energy conservation programs.

21 A. Oh. Yes, there will certainly be,
22 and that potential would be captured both in our
23 offices segment information and the public service
24 segment to the extent that they are non-office type
25 buildings are included there.

1 Q. Do you foresee those programs in the
2 municipalities and by the municipalities accelerating
3 over the next decade from how they occur --

4 A. I would like to see them accelerated,
5 and in my discussions with the Ministry of Energy with
6 respect to how we get more players involved, and that
7 was one area that I saw would be an excellent area for
8 Ministry activity, particularly in through their
9 Ministry of Municipal Affairs, because they have a more
10 direct contact with the municipalities, although Hydro
11 would certainly play a role in any of those things.
12 But certainly we are looking along those areas.

13 The street lighting program generally is
14 the first big program that we targeted directly at
15 municipalities.

16 School boards are also very critical. We
17 are getting a lot of activity from the school boards.
18 The guaranteed energy program is also aimed at
19 municipalities, and we have a session with school board
20 officials on that program, it was very successful last
21 June.

22 Q. Going back to the City particularly,
23 the City of Toronto particularly, Ms. Fraser, I take it
24 you are aware that the City has an energy efficiency
25 office as a branch within the Department of Public

1 Works and the environment?

2 A. Yes, I am.

3 Q. And that that office has been
4 operating since 1990?

5 A. Well, I know that the manager of the
6 office was appointed in January, yes.

7 Q. And he was one of your colleagues at
8 Ontario Hydro.

9 A. That's right.

10 Q. The mandate of the EEO, the energy
11 efficiency office in the City includes the auditing of
12 city-owned buildings, the development of a plan for
13 retrofit measures for for such buildings?

14 A. Yes, I am aware of that. We also
15 recommended in the second report of the special
16 advisory committee to expand their mandate to include
17 street lighting.

18 Q. The special advisory committee of the
19 environment that you mentioned a number of times, what
20 is that committee?

21 A. That's a committee which reports
22 directly to council, as I understand it, which gives it
23 the status of a special advisory committee as opposed
24 to something that reports at the equivalent of a civil
25 service level.

...

1 [12:06 p.m.] I became involved in that committee about
2 a year ago after it had completed its first report
3 which resulted in the City of Toronto establishing its
4 20 per cent CO(2) reduction targets.

5 The second report which was issued, I
6 believe, in April of this year was what we had worked
7 on from September to April. It had a very, very strong
8 energy focus and which, I suppose, is one of the
9 reasons I was asked to join that committee.

10 There was also representatives from
11 Consumers Gas, the Ministry of the Environment, Friends
12 of the Earth, the Environmental Foundation and so on.
13 And we worked to basically develop what we think is a
14 fairly aggressive energy saving plan which calls on
15 some, you know, rather fundamental changes to the way
16 in which some things take place.

17 Q. And in response with the energy
18 efficiency office, the City is really devoting hundreds
19 of thousands of dollars to energy savings at this time.

20 A. That is my understanding, yes.

21 Q. And are you aware of any other
22 municipality that is devoting as many resources as the
23 City of Toronto to energy conservation, both staff and
24 fiscal?

25 A. As I said, I don't have a

1 quantitative fix of all the expenditures across the
2 province and Toronto, of course, is a large one.

3 Q. I wasn't going to ask you to mention
4 any names on the Special Advisory Committee.

5 Turning to page 61 of Exhibit 290, Mr.
6 Chairman, and on to the top of page 62 is the
7 supplementary response to our Interrogatory 4.20.29,
8 which has been referred to previously, Ms. Fraser; is
9 that correct? I believe this has been referred to
10 previously.

11 A. It could have been.

12 Q. And this document was various demand
13 management programs offered to the City by Ontario
14 Hydro. And I would like to now start to go through
15 some of these programs that have been offered to the
16 City as well as some of the other programs the City is
17 involved with and then just extend those to other
18 municipalities and see what the demand management
19 savings could be.

20 The power saver audit program, which you
21 mentioned and which is the first program mentioned in
22 supplementary response 4.20.29.

23 A. Yes.

24 Q. I take it that the City has formally
25 been part of that program since August 27th of year?

1 A. Yes. We initiated discussions with
2 them, I believe, the offer went from the then Chairman
3 of Ontario Hydro, Robert Franklin, to Mr. Art Eggleton
4 to offer to do audits for the City and to make our data
5 base that result from audits of other buildings located
6 in the City also available on a non-identifiable kind
7 of basis.

8 Q. And an agreement was signed between
9 Ontario Hydro, Toronto Hydro and the City of Toronto on
10 August 27th setting out what city-owned buildings would
11 be audited during the next year or so or nine months?

12 A. That's correct.

13 Q. And if I am not mistaken, there are
14 at least 331 city-owned buildings that will be audited?

15 A. Yes, that's correct, in the next nine
16 months, I understand.

17 Q. And that is of the 659 city-owned
18 buildings.

19 Do you recall that number?

20 A. Yes.

21 Q. And you do you also recall that that
22 represents 5.1 million of the City's 6 million square
23 feet of building area that it owns? Do you recall that
24 figure?

25 A. Yes.

1 Q. And I would just like to summarize
2 what is in that agreement. The audits that Ontario
3 Hydro will include, and please correct me if I am
4 wrong, the summary of the energy saving measures,
5 savings implementation costs, payback information, a
6 status report for each building, a summary of the
7 amount of savings per measure, and recommendations from
8 Ontario Hydro as to the priority for retrofitting the
9 City's buildings, and that will be, in part, based on
10 the City's and Toronto Hydro's knowledge of local
11 demand and consumption?

12 A. Correct.

13 Q. And are those the standard matters
14 that are addressed in building audits throughout the
15 province?

16 A. Yes, that is sort of the standard
17 output of our power saver audit program which we are
18 doing right across the province.

19 Q. And you will provide at least four
20 auditors to the City?

21 A. I understand that is the commitment
22 that we have made, yes.

23 Q. And the City, in turn, will provide
24 staff assistance and that Toronto Hydro will provide
25 data and staff input?

1 A. Yes. That data is very critical to
2 that power saver audit program.

3 Q. This is a large program, I take it?

4 A. Well, since the program began in
5 1989, we have done close to 4,000 audits. We are
6 currently committed with the federal government to
7 audit 1300 of their buildings every year for the next
8 five years and similar, to do 1300 buildings a year for
9 the provincial government every year in the next five
10 years. That is in addition to the thousand or so
11 audits that we will do across the province of which the
12 331 that you have indicated here will be done as part
13 of our 1991 target and our 1992 target.

14 Q. Is there any reason why the agreement
15 to carry out those audits can terminate on one month's
16 notice from either party?

17 A. My understanding is it is just one of
18 those things that lawyers like to put in agreements.

19 Q. Has it ever been utilized, that type
20 of provision? Has it been acted upon?

21 A. No.

22 Q. Do you foresee it being acted upon in
23 this case?

24 A. No.

25 Q. As to the estimated cost in savings

1 if the audits are implemented, turning to pages 1 and
2 2, Mr. Chairman, of Exhibit 290, this is a memorandum
3 that is entitled, "Re Update City of Toronto Audits".
4 It is dated, May 7, 1991. It is on Ontario Hydro
5 letterhead and it is signed by Mark Coles, programming
6 services, and it is to your attention as one of the
7 parties at the top.

8 A. Yes, although by this time, I was off
9 doing, I think, OEB preparations, so my first in
10 command received it.

11 Q. At the top of page 2 of this
12 document -- this is the document that lead up to the
13 agreement, I take it; is that correct? This was the
14 memo of understanding.

15 A. I believe it was sort of summarizing
16 the results of a meeting and then follow-up
17 discussions.

18 Q. It states, as a goal, that if the
19 power saver audit program is carried out as proposed -
20 what is now agreement - there would be demand
21 savings -- this is the top of page 2 -- of 10.8 per
22 cent.

23 A. Yes, I think that probably represents
24 a number that comes from sort of an average of the
25 4,000 or so buildings to date that we have done.

1 In terms of implementing the
2 recommendations of the audits, we expect that there
3 will be additional savings that will come from perhaps
4 customized programs, such as savings by design or
5 thermal cool storage or in addition to that, but these
6 are the kinds of things that an auditor can, in a
7 walkthrough, do recommendations on.

8 Q. Has that 10.8 per cent been
9 translated into megawatt savings in the City of Toronto
10 context in the agreement?

11 A. I don't know if it has been or not at
12 this point.

13 Q. The energy savings would be 14.2 per
14 cent as an estimate there?

15 A. Yes.

16 Q. Again, I take it that is based on
17 experience elsewhere?

18 A. Yes.

19 Q. The prescriptive rebate level of \$2.2
20 million, first of all, could you refresh my memory as
21 to what "prescriptive rebate level" means?

22 A. Those are the ones that we can
23 calculate easily and are built in to the customized
24 software that we use for the power saver audit program.
25 These would include if a recommendation was to change

1 all the fluorescent tubes to T8 lamps and we provide a
2 prescriptive rebate or an incentive on a per lamp basis
3 or a per fixture basis, that that software would
4 automatically calculate what the rebate would be,
5 and estimate it that way.

6 So motors, lights, occupancy sensors,
7 those sorts of products that can be installed on an
8 either a one-for-one basis or a window film on the
9 basis of a square footage, those sorts of things.

10 Q. Okay. And then the cost to the City
11 to implement these audits, excluding those rebates, is
12 shown to be \$7 million?

13 A. That is what is indicated here, yes.

14 Q. That is a substantial amount of
15 money, isn't it?

16 A. Yes, it is.

17 Q. And are you aware of any other
18 municipalities that could be able to afford such a
19 large expense?

20 A. I don't know too many other
21 municipalities that have 6 million square feet of floor
22 space.

23 Q. Good answer.

24 A. And proportional, I don't know how
25 you could afford not to because the energy savings

1 would be significant from it.

2 Q. Would you foresee many more
3 municipalities coming into the power saver audit
4 program if the incentives were increased beyond what is
5 involved here; for example, in the City agreement?

6 A. Well, to date, I guess we haven't --
7 we have increased our incentive levels where we thought
8 we weren't getting the uptake we wanted and all those
9 changes, I think, are indicated in Interrogatory
10 4.20.45, which I referred to in my direct, so it is
11 already on an exhibit, and that includes municipalities
12 and school boards participating as well.

13 We are certainly going to keep an eye on
14 things and incentives have to move up to get the kind
15 of participation that we want, and if it looks like we
16 can get more with higher incentives, then we will.

17 Q. So you are constantly evaluating
18 that?

19 A. Yes.

20 Q. So, the City may not be getting the
21 largest incentive available?

22 A. No, but you will for street lights.

23 Q. We will get into that in a moment?

24 A. Okay.

25 THE CHAIRMAN: I am not sure this would

1 be either a marketing or a negotiating exercise.

2 MRS. FORMUSA: We are in your hands.

3 MR. H. POCH: I take that under
4 advisement, Mr. Chairman.

5 Q. You would agree though, Ms. Fraser,
6 that these type of audits, city-owned,
7 municipally-owned buildings are the ideal vehicles to
8 begin the process of identifying opportunities to
9 implement energy efficiency in municipally owned
10 buildings?

11 MS. FRASER: A. Yes, our non-profit
12 housing program which isn't listed in the interrogatory
13 here, we are starting with City Home for that very
14 reason and they are being extremely cooperative and
15 helpful in terms of ironing things out before we go out
16 to the big bad world.

17 Q. Have you estimated the demand savings
18 that will occur by the various municipalities
19 implementing these types of programs over the next
20 several years?

21 A. Our estimates to date based on both
22 the potential and the attainable numbers as I said are
23 done on a segment basis rather than who owns the
24 building but although the different ownership patterns
25 within each segment are certainly something that we

1 take into consideration -- And because for instance,
2 the offices segment which also has the largest
3 potential is greatly populated by all levels of
4 government. We certainly think our highest penetration
5 rate is expected in that segment as a result.

6 Q. But you haven't actually calculated
7 it out?

8 A. No, we haven't again done it for all
9 707 municipalities in the province, we haven't done
10 that.

11 Q. So that really hasn't been taken into
12 account in the load forecast yet?

13 A. It is already included in the segment
14 it is not done explicitly on a municipality by
15 municipality basis, that is all. It is included in the
16 load forecast.

17 Q. I see you nodding, Mr. Burke.

18 MR. BURKE: A. Yes, because as Ms.
19 Fraser indicated, the analysis is done independent of
20 who actually owns the building.

21 Q. Now, Ms. Fraser, these types of power
22 saver audits, are you aware of how many universities in
23 the province have undertaken this type of power saver
24 audit program?

25 MS. FRASER: A. The information that is

1 filed in Exhibit 4.20.1, I believe, lists all the
2 people who have participated in audits if I am not --
3 no, that is the management report, sorry. We certainly
4 have the list of all the participants in the program.
5 I can get that.

6 Q. Have all the universities
7 participated?

8 A. I don't know at this point. Quite a
9 few educational institutions have either participated
10 in that or they are involved with energy service
11 companies, have been for awhile, which we are working
12 with them through the guaranteed energy performance
13 program.

14 Q. Have all of the public school boards
15 and separate school boards participated?

16 A. I don't know if they all have yet,
17 no. But quite a few of them have and we have been
18 working for instance, say with the Frontenac School
19 Board in terms of and you no, basically integrating
20 information and awareness about energy efficiency right
21 in the curriculums and projects for the school and that
22 kind of effort. They have received incentives for
23 installing energy-efficient equipment as well.

24 Q. Have all of the hospitals in the
25 province participated yet?

1 A. I don't know if all the hospitals
2 have yet, no.

3 Q. Do you have a number of how many of
4 these institutions?

5 A. I haven't got them with me. As I
6 say, we have something 4,000 since the program started
7 in June 1989.

8 Q. I take it there are a considerable
9 number of institutions--

10 A. Yes.

11 Q. --that haven't been accounted for yet
12 and really haven't been considered in the load
13 forecast, the reductions potential?

14 A. No all those things are considered in
15 the load forecast and they are considered in the
16 potential. We don't wait for the power saver audit
17 information to do our potential numbers. That data
18 base will assist us in refining and re-estimating doing
19 sort of the annual updates that Mr. Burke talked about,
20 but no, we started from a macro-look in terms of
21 estimating potential and now we are building up from --
22 basically what we are using the power saver audit
23 program for is to help identify to customers where they
24 can make savings. There are a lot of low cost no cost
25 savings that they can do themselves. There are a lot

1 of things that we can use the prescriptive rebates for
2 and then beyond that, there are customized projects
3 because every commercial building is really a unique
4 entity. And that is really what we are doing there.

5 Q. Mr. Burke, in respect of the various
6 institutions that could be involved in this type of
7 program, what penetration rate did you ascribe to those
8 institutions?

9 MR. BURKE: A. Well,

10 THE CHAIRMAN: Just so I understand it,
11 this power saver audit alone doesn't produce any
12 savings. The person who is audited then has to follow
13 through with some kind of activity.

14 MS. FRASER: That's right.
15 Identification only, we need the action.

16 MR. H. POCH: Q. Assuming that those for
17 clarity, Mr. Chairman, assuming that those power saver
18 audits are carried out as energy conservation programs
19 within the municipalities, what penetration rate did
20 and you describe to the various institutions that
21 could be involved?

22 MR. BURKE: A. First of all, I just want
23 to make clear that I don't ascribe penetration rates,
24 they're are penetration rates that are recommended by
25 the Energy Management Branch but they are all

1 summarized in Exhibit 76, page 46 and 47. For existing
2 educational buildings, we have 28 per cent for
3 instance, and new education buildings, 45 per cent.
4 Hospitals, existing 25 per cent, new, 60 per cent, so
5 on, they are all listed.

6 Q. Those seem to be fairly low for
7 public buildings.

8 A. Well, this is the average penetration
9 rate by the year 2000 to undertake all of the measures
10 identified in the potential. And I think there are a
11 variety of considerations that effect the timing of
12 investment decisions by the various parties involved
13 that may cause the penetration rates to be as
14 recommended here.

15 Q. Did you question that recommendation
16 from the Energy Management Branch as to those various
17 penetrations? Did you comment upon them or did you
18 just accept them?

19 A. Well, they had been discussed, I
20 think, amongst a group of people both in the economics
21 and forecast division and energy management branch. I
22 think the penetration rate estimates reflect a variety
23 of institutional considerations in each case. Who the
24 decision-makers are in each of the institutions and
25 what constraints they act under after all there would

1 be need for some financial contribution on the part of
2 the various institutions and their own cycles of
3 renovation and so on which are required for some of
4 these measures to be truly attractive limit the pace at
5 which penetration by the year 2000 can be obtained.

...

1 [12:25 p.m.] I think Ms. Fraser could expand on some
2 of the issues that you run into with the various types
3 of institutions.

4 Q. Given those penetration rates,
5 assuming that the carrying out of the audits through
6 various programs cost less than the avoided cost to
7 supply, wouldn't it be worthwhile for Ontario Hydro to
8 go in and give a full incentive to those various public
9 institutions to bring the penetration rate up closer to
10 100 per cent?

11 MS. FRASER: A. I think it is important
12 to understand what these penetration rates mean. It
13 doesn't mean that we only expect 45 per cent of the
14 schools to participate, but that on average, in terms
15 of the whole potential that's in a school, in all the
16 schools in the province, that by the year 2000 we can
17 do something that will affect 45 per cent of it.

18 Obviously, there are all the
19 considerations that Mr. Burke just raised. Even an
20 energy service company which goes into a school and
21 pays the full cost and then recovers through savings,
22 energy service companies estimate that the average time
23 it takes to get a customer moved from interest into
24 signing and agreement is around two years.

25 And I guess I would also point out that

1 if we look at page 1 in Exhibit 290, that that original
2 memo dated May 7th by Mr. Coles, we were prepared to
3 have all the audits done by September 1st, 1991, had we
4 been able to start immediately. However, as you have
5 indicated, the agreement wasn't signed until September
6 27th, and you have actually attached a draft of the
7 legal agreement, something that we haven't required
8 with any other customer, even the federal and
9 provincial governments.

10 Q. But you have required it from the
11 City?

12 A. We didn't require it; the City
13 required it.

14 Q. Okay.

15 A. So, those sorts of institutional
16 decisions, those things, I understand that this whole
17 process had to go to City Council, those things all
18 take time and effort and we have to recognize that in
19 the realities of doing business, but it doesn't
20 discourage us from doing it, however.

21 Q. In defining the potential in Power
22 Saver audits is the economic criteria Hydro's avoided
23 cost or consumer electric rates?

24 A. Could you say that again?

25 Q. When you define the potential for

1 Power Saver audits, is the economic criteria that you
2 utilize your avoided cost to supply or the consumer's
3 electricity rate?

4 A. What we do basically is ask the
5 customer going in, this is one of the features of the
6 Power Saver audit plan, as to what is the payback
7 period that they are sort of interested in terms of
8 identifying options for saving. And so what that does,
9 it doesn't limit what we look at. We look at
10 absolutely everything. We do a complete inventory.

11 The auditor's recommendations are not
12 limited to, say, for instance, they wanted to look at
13 everything with a five year payback or less, that then
14 goes into the main body of the report. The appendix of
15 the report includes everything no matter how long the
16 payback is.

17 I think I indicated, either in my direct
18 evidence or perhaps in the testimony with Mr. David
19 Poch, in discussions with the federal government, they
20 were interested in looking at anything with a ten year
21 payback or less, in addition to looking at T8 lights
22 everywhere no matter what the payback as on a policy
23 basis. When we first started discussions with the
24 provincial government, they wanted to look at
25 everything with a five year payback or less, even

1 though that bundle of options that we looked at with a
2 ten year payback or less in the federal package was, I
3 think it was less than a two year payback when you
4 actually put them altogether. So, when we explained
5 that to the provincial government, they also said,
6 well, let's look at anything with a ten year payback or
7 less.

8 As I said, the audit process could
9 possibly include things that may not even be
10 cost-effective from our point of view.

11 Q. Ms. Fraser, if I may, let me posit
12 this hypothetical to you, that by the year 2000 Ontario
13 Hydro could go in to every public institutional
14 building within the province and install energy
15 efficiency improvements, state-of-the-art at the time,
16 because, and I am assuming, based on your criteria,
17 that those improvements would be less than the avoided
18 cost of supply, would it be worthwhile for Ontario
19 Hydro to go in and undertake those improvements,
20 firstly, and secondly, if so, has there been any
21 consideration given in your analyses coming to this
22 hearing as to what the potential energy savings could
23 be? I am talking 100 per penetration now.

24 A. That I believe would be the number
25 that you asked Mr. Burke of.

1 Q. That would be the target, then, I
2 take it.

3 MR. BURKE: A. The target is an
4 attainable number, something that we hope to be able to
5 deliver on.

6 The potential is it all documented by
7 building type in Exhibit 76, on page 47, and in
8 Appendix B, and it's available there. That's all you
9 need to know if you want to find out what we could do
10 if we were going to get 100 per cent.

11 Q. But you don't foresee that occurring,
12 do you?

13 A. No.

14 Q. Moving on to the savings by design
15 program.

16 THE CHAIRMAN: Before we leave, there was
17 reference I think to two interrogatories and I don't
18 think either of them are mentioned in Exhibit 261. One
19 is 4.20.29, and the other is 4.20.1. They should get
20 the next two numbers.

21 MRS. FORMUSA: I think Ms. Fraser
22 referred to 4.20.1 and then retracted the reference.

23 MS. FRASER: Yes, they had contained the
24 management reports for the Power Saver audits. It
25 doesn't indicate the numbers and addresses of the

1 customers. That's actually confidential information
2 anyway.

3 MRS. FORMUSA: So 4.20.1 wasn't an
4 intended reference, so I don't think we will add that.

5 THE CHAIRMAN: All right, we won't
6 include but. But we will include 4.20.29. What number
7 will that be?

8 THE REGISTRAR: That will be 261.40.

9 THE CHAIRMAN: Thank you.

10 ---EXHIBIT NO. 261.40: Interrogatory 4.20.29.

11 MR. H. POCH: Thank you, Mr. Chairman.

12 Q. Moving to the savings by design
13 program, that's mentioned in the memo on page 2 of
14 Exhibit 290, Ms. Fraser?

15 MS. FRASER: A. Yes, it is.

16 Q. You would agree that some city-owned
17 commercial buildings require system retrofit?

18 A. I will know better after I see all
19 the audit reports, but we will see. I am sure over the
20 next decade there certainly will be.

21 Q. And those types of retrofit programs
22 would fall within the savings by design program?

23 A. Yes. Savings by design allows us to
24 do customized rebates specific to a building.

25 Q. You haven't calculated the potential

1 energy savings through that program, have you?

2 A. We have not specific to the City, no.

3 Q. Or for any other municipality in
4 total?

5 A. No. We have just looked at the
6 program as a total.

7 MR. H. POCH: Mr. Chairman, if I may have
8 a minute.

9 Q. Now, Ms. Fraser, I would like to move
10 onto energy impact statements in respect to new
11 building designs. Are you aware of that concept?

12 MS. FRASER: A. I am aware that the City
13 is requiring energy conservation plans for all new
14 buildings in order to get the developmental approvals
15 they require. It's a recent addition.

16 Q. Are you aware of what criteria is
17 being imposed?

18 A. No, I am haven't seen the
19 documentation on that. I saw a presentation given by
20 Mr. Morris of the Office of Energy Efficiency, but at
21 that point he didn't outline the details of the
22 requirements.

23 Q. I take it Burlington also requires
24 that, does it?

25 A. Burlington requires that they go

1 through our programs which I think is a little bit
2 different, but certainly requires that they look at
3 energy efficiency.

4 Q. Are you recommending that to other
5 municipalities, that they impose that type of
6 requirement?

7 A. That's certainly one of the things
8 that we are looking at doing. It's part and parcel as
9 we rule out the enhancement to savings by design, which
10 we hope to do early the new year, which would be based
11 on ASHRAE 90.1, which is a standard for commercial
12 building construction which the special advisory
13 committee report also recommended be used as well.

14 Q. Now, way back, months ago in
15 evidence, projected commercial, industrial and
16 residential development scenarios were forecast for the
17 forecast period as to what the potential development in
18 those sectors would be.

19 A. Are you speaking now about the load
20 forecast in Panel 1?

21 Q. Yes. Do you recall that, Mr. Burke?

22 MR. BURKE: A. Yes.

23 Q. Now, if all new buildings during the
24 forecast period were required to meet the ASHRAE 90.1
25 requirements, at least in the commercial sector, have

1 you calculated what savings would occur?

2 MS. FRASER: A. I think that's included
3 in one of the scenarios that we tabled, if not
4 explicitly, then implicitly.

5 Q. Has that been taken into account in
6 the load forecast fully?

7 MR. BURKE: A. Well, clearly not in the
8 sense that that would imply all of the new buildings
9 adopting that standard.

10 No, I think Ms. Fraser is referring to
11 Scenario C where new buildings were fuel switched and
12 it was thought that roughly equivalent savings could be
13 achieved were the buildings to apply ASHRAE 90.1, and
14 that is given explicitly in Exhibit 258.

15 What I was thinking about was whether
16 ASHRAE 90.1 as a standard is equivalent to the analysis
17 we have done for potential, and I am not sure I am in a
18 position to say whether it is or not. So, that I
19 really can't answer your question directly.

20 Q. Can Ms. Fraser?

21 A. Well, as far as the potential is
22 concerned, I am not sure she can. But as far as what
23 was intended in Scenario C, maybe she can say something
24 about that.

25 Q. Ms. Fraser?

1 MS. FRASER: A. I am trying to recall.

2 I believe my staff, in putting together the enhancement
3 to savings by design, have done some estimate on that
4 based on the new construction estimates that are
5 imbedded in the load forecast. But I don't have them
6 with them at the time right now.

7 Q. Were they substantial savings?

8 A. The ASHRAE 90.1 standards tends to
9 have about a three to four year payback, as I
10 understand it.

11 Most of the large buildings that are
12 built in the City of Toronto actually are built above
13 ASHRAE 90.1. It is the smaller buildings that are
14 built, the two storey strip malls and things of that
15 sort which tend not to incorporate many energy
16 efficiency options.

17 Q. And those predominate throughout the
18 province, really, don't they?

19 A. Yes, they do. So, those are the
20 things that we would certainly like to see covered by
21 some kind of standard mandated by the provincial
22 government.

23 Q. So, there is a large potential
24 savings that really hasn't been accounted for yet?

25 A. The potential is included in the

1 potential numbers.

2 Q. But not in the attainable?

3 A. In the attainable numbers the extent
4 to which if you took the various penetration rates that
5 we have here, you couldn't just gross it up and say,
6 well, then you would get 100 per cent, because our
7 expectations of energy efficiency potential were
8 certainly higher than what ASHRAE 90.1 could do.

9 What we would like ASHRAE 90.1 to do is
10 become the minimum, not the maximum.

11 Q. Through the use of ASHRAE 90.1 as a
12 standard, is there is a difference in intensity that
13 would result by incorporating that standard?

14 A. I think if we do it right,
15 incorporating that standard and expanding the
16 infrastructure in terms of consulting engineering
17 community, with respect to more intense
18 energy-efficient options, more intense use of
19 computerized building energy simulation models and
20 things of that sort, we expect to enrich that whole
21 developer, consulting engineering, commercial
22 construction marketplace in terms of energy efficiency,
23 and that's part of the objective and the approach that
24 we are taking in energy management, rather than just
25 going in and saying, do X and do Y and that's it.

1 Q. Has that approach been translated
2 into a rate structure, Mr. Harper?

3 MR. HARPER: A. I'm sorry, I lost the
4 thread of the question you were following there.

5 Q. As Ms. Fraser says, complying with
6 ASHRAE 90.1, standards would be beneficial. With new
7 development coming on line has there been any thought
8 given to an increased rates, or differential rate
9 structures for buildings that comply or don't comply
10 with that standard?

11 A. No, not at this time.

12 Q. Is it feasible? How about special
13 hook-up fees?

14 A. I would say, yes, it's feasible.
15 Anything is feasible.

16 Q. Is it possible? Is there a good
17 potential for that occurring, or should it occur?

18 A. I guess that's the question I would
19 more like to explore in terms of why one thinks one
20 should be charging higher rates for those particular
21 applications.

22 If it's because you truly believe that
23 they are inappropriate uses, then again I think that's
24 something that's better handled through the government
25 policy and through a standard than through rates.

1 Q. Thank you, Mr. Harper.

2 MR. BURKE: A. I would like to add in
3 light of Ms. Fraser's evidence about ASHRAE 90.1, that
4 many of the measures that are included on potential
5 estimates that are documented in Exhibit 76, exceed
6 three year paybacks or four year paybacks. And my
7 sense is that it is quite possible, while it's
8 difficult to compare because we didn't set out to
9 impose ASHRAE 90.1 on all of the buildings in the
10 province, that our estimates of potential, because they
11 are based on the total customer cost test what passes
12 that as opposed to a three or four year customer
13 payback criterion, may in fact imply a higher potential
14 than would be achieved with the ASHRAE 90.1.

15 Q. Do you ever have anything positive to
16 say, Mr. Burke?

17 A. I thought that was very positive.
18 Didn't you?

19 I mean, I am suggesting there is more
20 potential there than a standard that people are
21 advocating and putting forward.

22 Q. Moving on to another demand
23 management program the City is involved with, Ms.
24 Fraser, and that is known has deep lake water cooling.
25 It has had the acronym "freecool", that is actually a

1 technology, I understand, that one of the proponents of
2 this type of demand management program is putting
3 forward. so, deep lake water cooling which is also
4 know as DLWC. Are you aware of that study?

5 MS. FRASER: A. Yes, I am aware it's a
6 study. It's not a program per se in the same sense of
7 these things.

8 Q. If we turn to page 63 of Exhibit 290,
9 Mr. Chairman. This is response to Interrogatory No.
10 4.20.128.

11 Perhaps we could give this an
12 interrogatory No., Mr. Chairman.

13 THE CHAIRMAN: 4.20.128.

14 THE REGISTRAR: That will be 261.41.

15 ---EXHIBIT NO. 261.41: Interrogatory No. 4.20.128.

16 MR. H. POCH: Q. Ms. Fraser, are you
17 familiar with this response?

18 MS. FRASER: A. Yes, I am.

19 Q. In part it states that Ontario Hydro
20 as partially funded the preparation of environmental,
21 technical and economical papers on this study, as well
22 as a public conference held in the City last June,
23 particularly in respect of the potential deep lake
24 water cooling usage that could occur.

25

...

1 [12:46 p.m.] A. Correct, and there is, I believe, a
2 task force in existence which are one of our directors
3 of energy management branch is on.

4 Q. That's right. And that task force
5 membership is set out on page 66, Mr. Chairman, and
6 that includes representatives from the City of Toronto,
7 Ontario Hydro, Metro Toronto and other bodies. And
8 Ontario Hydro also has provided information from your
9 own studies to this task force on the environmental
10 effects of cooling water intakes and discharges; is
11 that correct?

12 A. I believe so, yes.

13 Q. So, would you agree that deep lake
14 water cooling is a concept which, if I am correct, is a
15 use of cold water that would be drawn from the depths
16 of Lake Ontario to cool downtown buildings in order to
17 replace conventional cooling systems? Would you agree
18 that that concept is worthy of study, further study?

19 A. Yes, I do. I don't think it
20 precludes reducing the amount of cooling required by
21 the buildings in the first place, but it is an
22 important complement.

23 Q. And that concept is still being
24 studied, particularly in the Jarvis Street, Bloor
25 Street, Spadina Avenue and Queens Quay area; is that

1 correct?

2 A. That's correct.

3 Q. You are also aware that the City has
4 been asked to contribute to further research and
5 Ontario Hydro's requested that, I believe; is that
6 correct?

7 A. I am not familiar with any of the
8 details lately that Mr. McIntyre has been working out.

9 Q. Would you agree that this concept,
10 deep lake water cooling, could reduce the peak demand
11 in the central core of the city?

12 A. In the summer and possibly some
13 impact in the winter as well.

14 Q. Are you aware of what extent peak
15 loads could be reduced by this concept, if implemented?

16 A. I have heard figures from from
17 between, I think, 100 to 400 megawatts, but I don't
18 have anything more than that.

19 Q. It could be up to 25, 30 per cent of
20 the peak demand in the City, I take it then?

21 A. Significant, yes.

22 Q. For purposes of your load forecast,
23 Mr. Burke, have you considered any such load reduction
24 from utilization of deep lake water cooling within the
25 City?

1 MR. BURKE: A. As winter free cooling
2 was added to the 1990 load forecast, I am just looking
3 for the estimate of the impact. I think I am going to
4 have to give that to you after lunch, but it was
5 explicitly included in the 1990 load forecast for the
6 first time.

7 Q. That would have been on the basis of
8 the cooling of the City of Toronto only, I take it, is
9 that correct, by this concept?

10 A. I believe so.

11 Q. And that would be for winter peak
12 only?

13 A. Yes, that was the way it was
14 included.

15 Q. Not summer peak. I would ask that
16 you provide that information after lunch, please.

17 If deep lake water cooling is possible
18 and obviously, it is possible in your mind given that
19 you have taken it into account in, at least, part of
20 your forecast, if it is possible in the City's central
21 core, is it also possible in Hamilton where you have
22 large industry right on the shores of Lake Ontario, in
23 Burlington, in Oakville where you have the refineries,
24 in other locations near Lake Ontario?

25 MS. FRASER: A. I may not be familiar

1 enough with the cooling loads with respect to those
2 industries to speculate, but if it works one place,
3 perhaps it could work somewhere else. There may be
4 some economies of scale with respect to the density of
5 large commercial buildings that might make it more
6 attractive in Toronto than elsewhere.

7 Q. But there is the potential for those
8 other locations; maybe even Kingston or other major
9 urban centres, too.

10 A. Certainly Kingston has district
11 heating and they are looking at, I believe, some
12 cooling applications as well, maybe absorption
13 chilling, however.

14 Q. And those other locations, Mr. Burke,
15 I take it haven't been accounted for in your load
16 forecast, just as you said, the City of Toronto?

17 MR. BURKE: A. Yes. In looking at my
18 notes here, it would seem to me that it has only been
19 added to existing large offices for a saving of 10
20 megawatts on the winter peak energy savings though
21 where assigned year round, and that is a total of about
22 20 gigawatthours. But I would like to confirm that I
23 have got the only -- that there isn't more in that.

24 Q. Yes, Ms. Fraser, I am sorry?

25 MS. FRASER: A. I believe, the free

1 cooling that is included in the load forecast is free
2 cool using, say, a plate heat exchanger to back off
3 chillers in large buildings as opposed to the deep
4 water.

5 We were, you know, still in the midst of
6 looking at the technical feasibility of it. I don't
7 believe it would be put in the load forecast for that
8 reason.

9 MR. BURKE: A. Certainly what I have got
10 here is the winter freecooling and it probably is
11 through towers now that Ms. Fraser --

12 MS. FRASER: A. We have got a number of
13 savings by design programs that have materialized using
14 what we call freecooling.

15 Q. So what I hear now, and correct me if
16 I am wrong, is that fact that what you have considered
17 in your load forecast is not the same thing that I was
18 talking about?

19 MR. BURKE: A. That's correct, yes. And
20 that technology you are talking about is something that
21 is yet to be quantified.

22 Q. But there is a very large potential
23 reduction that could occur during the next decade from
24 the utilization of deep lake water cooling; isn't that
25 correct?

1 MS. FRASER: A. Yes, if we can ascertain
2 the technical feasibility of it and environmental
3 aspects and so on and so forth.

4 Q. And there are willing private sector
5 proponents of it, aren't there?

6 A. Yes, there are, yes. Now, it is an
7 idea that has got some interest and very much so.

8 Q. And would Ontario Hydro be willing to
9 provide large incentives to ensure that that type of
10 program is feasible, came on line?

11 A. Well, I have indicated, maybe not
12 formally, that I would entertain it under savings by
13 design.

14 MR. H. POCH: Mr. Chairman, I am moving
15 on to another area right now of demand management
16 savings in the City.

17 THE CHAIRMAN: All right.

18 MR. H. POCH: If we can take a break at
19 this time?

20 THE CHAIRMAN: Yes. We can break until
21 2:30. Perhaps because of the transportation
22 difficulties, we should close a little early today.
23 4:30 would, perhaps, be a more appropriate time to aim
24 for, see how we are doing. All right.

25 THE REGISTRAR: This hearing will adjourn

1 until 2:30.

2 ---Luncheon recess at 12:54 p.m.

3 ---On resuming at 2:35 p.m.

4 THE REGISTRAR: This hearing is again in
5 session. Please be seated.

6 THE CHAIRMAN: Mr. Poch?

7 MR. H. POCH: Thank you, Mr. Chairman.

8 Q. Panel, I would now like too turn to
9 another demand management program that the City is
10 involved with. And again, Ms. Fraser, I will probably
11 direct this line of questioning to you initially at
12 least.

13 MS. FRASER: A. Yes.

14 Q. Are you aware that City council has
15 adopted a policy that the residential portion of the
16 railway lands is to add no new demand for energy and
17 that residential development is to utilize co-generated
18 power in waste heat, if possible?

19 A. I was aware of the study for that. I
20 didn't realize that council had adopted that.

21 Q. Now, whether or not it has been
22 adopted by council, that type of potential reduction in
23 demand in the residential sector, has that been
24 accounted for, that quantity in the load reduction in
25 the year 2000 A.D?

1 A. I don't think so, no. That is quite
2 an ingenious project.

3 MR. BURKE: A. I just want to add here
4 that there is a difference between what we call
5 potential induced and attainable induced. And in many
6 cases, the things that you are describing are things
7 that may be captured in the potential, but because the
8 City is now actively doing things, it increases their
9 chance of being attained.

10 Q. Yes, I am well aware of that, Mr.
11 Burke.

12 Has the potential reduction been captured
13 in your load forecast?

14 A. Well, if the measures that are being
15 adopted are economic, then we have tried to capture
16 them.

17 Q. Are you aware if they are economic?

18 A. What, the measures that are being
19 proposed in the --

20 Q. In the railway lands with respect
21 to --

22 A. No, I don't know whether they are
23 economic, but if they were, to the extent that they are
24 and we looked at new housing and so on, then they
25 should be captured in our potential induced estimates.

1 Q. Perhaps we are not understanding each
2 other. Maybe I am not following what you are saying.

3 The railway residential development, has
4 been included in your calculations of new development
5 potential within the province during the forecast
6 period; is that correct?

7 A. Well, it is not explicitly there
8 under the line "railway lands". It is part of the
9 overall housing projection or commercial space
10 projection for the province.

11 Q. I take it that you attributed to that
12 portion of residential development and associated
13 energy and demand?

14 A. Yes, and then an associated -- on the
15 potential, there is a certain amount of efficiency
16 improvement that could result. And there is also
17 various places in our planned cogeneration estimates
18 that may or may not be directly linked to that
19 particular site at this point but are part of the
20 potential in the province.

21 Q. But did you take into account in your
22 load forecast this policy of the City council that the
23 residential portion of the railway lands which is to be
24 adopted is to add no new demand for electricity?

25 A. No. I think that is quite clear, but

1 the way you have been speaking sometimes, I am never
2 sure when you say about my load forecast whether you
3 mean whether we have recognized the potential or
4 whether we are just talking about the penetration
5 rates, the proportion of the potential we actually
6 intend to get.

7 The load forecast which is simply
8 detainable probably does not recognize that the
9 particular directive that you are talking about might
10 represent an increase in penetration rate above and
11 beyond that which we have included, may or may not.

12 Q. But you haven't taken that into
13 account yet?

14 A. That is not an explicit entry, that
15 is for sure.

16 Q. Okay.

17 Ms. Fraser, moving on to district steam
18 heating and cooling.

19 MS. FRASER: A. Yes?

20 Q. In fact, a form of fuel substitution,
21 correct?

22 A. Yes.

23 Q. Are you aware that later this month
24 City council may consider the possibility of the
25 Ataratiri project being heated by steam?

1 THE CHAIRMAN: I am sorry, what project?

2 MR. H. POCH: Ataratiri,

3 A-T-A-R-A-T-I-R-I.

4 THE CHAIRMAN: All right.

5 MR. H. POCH: That is the housing project
6 proposed around the Don River area, sir.

7 MS. FRASER: I am not familiar with that
8 explicit one, no.

9 MR. H. POCH: Q. Okay.

10 DR. CONNELL: May I just ask what you
11 mean by heated by steam? What would the steam be
12 heated by?

13 MR. H. POCH: Fossil fuel, I understand.
14 That would be subject to confirmation, Dr. Connell, but
15 I believe that is the case.

16 DR. CONNELL: I.e., gas?

17 MR. H. POCH: Yes, sir.

18 Q. Now, assuming that that policy is
19 enacted by City council later this morning, I take it
20 then that you have not taken into account in your load
21 projections for that new development at least, or other
22 comparable developments that electricity wouldn't be
23 used in coming to your load projection?

24 MS. FRASER: A. For space heating?

25 Q. Yes.

1 A. And water heating? Actually Scenario
2 C assumes that all new commercial and residential
3 development would be heated by something other than
4 electricity, by edict actually, if I am correct with my
5 scenarios, so that is already included in the --

6 Q. In one of your five scenarios?

7 A. It is in the C, yes, the one that is
8 virtually equivalent to the 3500 targets which have
9 been adopted by us.

10 Q. And now, C, that relates to steam
11 heating, though.

12 Does that scenario take into
13 consideration the possibility of steam absorption
14 cooling systems and the reduced load that would be
15 incurred if those types of systems such as a C2 steam
16 line technology were introduced to new residential
17 development?

18 A. I don't think so, but again, that
19 wouldn't affect the 3500 number because that is
20 measured on a winter basis. It would affect the energy
21 numbers if it it were included, but not the peak.

22 I am familiar with other projects that
23 Hydro is now funding with the City to look at the
24 expansion of district heating to another housing
25 project.

1 Q. That one would be the one near David
2 Cromby Park, would it, 520 units?

3 A. I believe that is the one. If I
4 could just point out, I believe our commitment is that
5 if it turns out to be economic, that we will be
6 providing incentives for that fuel switching
7 application.

8 Q. Again, that type of fuel switching
9 hasn't been included in demand reductions that are in
10 your potential or your attainable?

11 A. Well, I think to the extent that the
12 fuel switching scenarios that we have, particularly
13 Scenario C, if it were heated by gas directly or with a
14 furnace in the basement or whether it was heated by
15 district heating is not really an issue once it is
16 "switched off electric."

17 Q. Okay.

18 A. In any case, the ban of the use of
19 electricity for non-profit housing that was effective
20 in March of this year would, no doubt, apply to many of
21 these projects that you are talking about anyway.

22 Q. Moving on to the actual resources
23 that have been committed by the City in demand
24 management programs, and this will be the last line in
25 this area of questioning, Mr. Chairman, we mentioned

1 the energy efficiency office.

2 Are you aware of the number of staff,
3 full-time staff, in that office?

4 A. The last I knew it was four, but I
5 gather there has been expansion with respect to the
6 audit program.

7 Q. Yes. And you are aware also that
8 senior officials in the Department of Public Works and
9 the Environment are involved with that office and the
10 work that is going on there?

11 A. Yes, I understand that.

12 Q. And that there are hundreds of
13 thousands of dollars being expended on the City in
14 support of that office?

15 A. I have never seen the budget of it,
16 no. Obviously, it is

17 Q. Are you aware that the City is
18 funding up to \$136,000 for studies associated with deep
19 lake water cooling this year?

20 A. I wasn't aware of the budget, no.

21 Q. And are you aware that the City is
22 funding exclusively at this time this intervention and
23 isn't funding panel assistance being given to the City?

24 A. I was aware there were some large
25 dollars involved, yes.

1 MRS. FORMUSA: Mr. Poch?

2 MR. H. POCH: Yes.

3 MRS. FORMUSA: I don't like to interrupt
4 my friend's cross-examination, but I have listened all
5 morning and this afternoon and the questions are
6 bordering to a certain extent to Mr. Poch putting his
7 case in through his questions and then very marginally
8 leading up to questions which, I believe, are relevant
9 and that the witnesses can answer.

10 I think it is fair to ask if the
11 witnesses are familiar with a particular program of the
12 City of Toronto and to ask how that program has been
13 included in our demand management plan, but I do think
14 it is somewhat unfair and I expect that Mr. Poch,
15 through his witnesses, will be leading evidence about
16 the City's efforts.

17
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25 ...

1 [2:45 p.m.] I have just had a sense all morning that
2 he has been trying to make the Board aware of the
3 City's efforts through my witnesses, and as I said, I
4 don't think that that's appropriate.

5 MR. H. POCH: Mr. Chairman, I would just
6 like to finish off this line of questioning at this
7 time.

8 THE CHAIRMAN: Well, I tend to agree with
9 what Mrs. Formusa said. I would regard it as harmless
10 except to the extent it was taking up time, that some
11 of these questions that have been asked particularly in
12 this area but I didn't interrupt.

13 I think that what these panelists are
14 here to do is answer questions about things that they
15 know about and not here to indirectly have an
16 intervenor put in his case.

17 MR. H. POCH: Mr. Chairman, if I may, our
18 cross-examination has been answered almost completely
19 in the sense that Ontario Hydro's witnesses have been
20 able to answer most of the questions that we have
21 posed. And the cross-examination, yes, like most
22 cross-examinations by counsel for intervenors attempts
23 to lay groundwork for a later case in chief, but at the
24 same time it obviously has been attempting to poke
25 holes in the proponent's case, and that has been the

1 main focus, the latter.

2 THE CHAIRMAN: To the extent that it does
3 that, that of course is quite proper. But I think that
4 this is a little different from an ordinary trial
5 procedure and there really is little point in asking
6 Ms. Fraser about how many people work in the office and
7 how many dollars are being spent, and things of that
8 kind. That's something that if you think is important
9 to us, you can bring forward when you put in your
10 witnesses.

11 MR. H. POCH: I will just refrain from
12 following up on those questions, sir.

13 Q. I would now like to move to item No.
14 7 on my outline of cross-examination, demand management
15 programs city not yet involved in.

16 Ms. Fraser, in particular, you mentioned
17 in your testimony previously two areas where the City
18 has not become involved with, first being the window
19 film program for the first floor of City Hall and,
20 secondly, the street light conversion program.

21 MS. FRASER: A. Yes.

22 Q. Do you recall that?

23 A. Yes, I recall it,

24 Q. I take it that City Hall is one of
25 the buildings that will be audited under the power

1 saver audit program; is that correct?

2 A. That's my understanding, yes.

3 Q. That will be a comprehensive audit of
4 the complete building, not just the first floor of City
5 Hall?

6 A. That's correct.

7 Q. Do you agree that it is more
8 appropriate to audit the whole building instead of just
9 one floor?

10 A. The window film wasn't on the floor.
11 I think --

12 THE CHAIRMAN: I think it best to stay to
13 one question. The question was: Do you agree whether
14 to do the whole building rather than one floor.

15 MS. FRASER: Absolutely.

16 MR. H. POCH: Q. I will follow up,
17 anticipate your answer.

18 Was that window film program that you
19 were discussing earlier limited to the first floor of
20 City Hall?

21 MS. FRASER: A. No. I am not sure
22 exactly what floors they are on. I remember the two
23 floors being pointed out to me, 10th and 14th, I am not
24 sure, on one of curving faces.

25 Q. But it wasn't all of the floors in

1 any event?

2 A. It was a test to see how it worked,
3 and at that point they thought they were going to go
4 ahead with that but then I understand there was some
5 architectural considerations and they decided not to.

6 Q. Okay. And you were also quite
7 critical of the City not taking part in the street
8 light conversion program.

9 A. No, I have no doubt that within the
10 time frame of the street lighting program that we will
11 have the City in the program.

12 What I was indicating in my direct was
13 that 75 per cent of the street lights in the City of
14 Toronto are incandescent street lights which are two
15 generations old in terms of technology and use five
16 times as much as the current technology, high pressure
17 sodium, which can produce the same amount of light.

18 Q. Are you aware that a report will be
19 going to the City's council on September 16th from
20 Commissioner of Public Works and the Environment
21 recommending institution of the street light conversion
22 program to convert 30,000 existing street lights in the
23 City?

24 A. I was aware from reading the
25 newspaper on Tuesday that a report had been completed

1 by the Minister of Public Works to do that.

2 Q. Are you aware, if this report is
3 adopted by City council and the program is instituted,
4 are you aware of the savings in gigawatthours per year
5 of electricity in load reduction that would occur?

6 A. Our calculations indicate somewhere
7 around, I think it is between 6 and 8 megawatts. I
8 haven't converted that to gigawatthours.

9 Q. I believe it's about 32-1/2.

10 A. It's significant, yes.

11 MR. H. POCH: Mr. Chairman, moving on to
12 the next topic, topic 8, Demand Management Programs Not
13 Yet Considered. Mr. Chairman, I wish to refer to
14 yesterday's transcript, Volume 56, at pages 1006 and
15 1007.

16 Q. Mr. MacLellan, at line 11, starting
17 there on page 1006, you go on to discuss heating
18 technologies and particularly baseboard heaters and
19 ducting work. Do you recall that?

20 MR. MacLELLAN: A. Yes.

21 Q. And the potential for fuel switching
22 in residential buildings?

23 A. Yes.

24 Q. I believe the specific instance was
25 talking about whether or not Hydro should ban electric

1 heating.

2 Q. Now, Ms. Fraser or Mr. MacLellan,
3 correct me if I am wrong, but I believe that testimony
4 so far has been that vis-a-vis fuel switching, the only
5 technology that has been looked at by Ontario Hydro is
6 a fuel switch in residential homes at least from
7 electrically-generated baseboard heaters on the first
8 floor, to heating from another source of fuel; is that
9 correct? You haven't looked at second floors or
10 multi-residential high-rise buildings?

11 MS. FRASER: A. Are you talking in terms
12 of the scenarios?

13 Q. Yes. I'm sorry, one minute.

14 In particular at Exhibit 257, where you
15 have you pie and that's found in Volume 2, which is
16 Exhibit 2, Volume 3 which is Exhibit 292 at page 6. In
17 looking at potential fuel switching in the residential
18 market, and perhaps, Mr. Burke, you are the person to
19 ask this questions to, you have only considered
20 residential buildings that have one floor; is that
21 correct?

22 MR. BURKE: A. Not strictly speaking.
23 The houses that have central heating already can be any
24 number of stories. It is just the market that was
25 using baseboards for electric heating that we have

1 restricted to the one storey buildings.

2 Q. That's fair enough.

3 Have you considered, Mr. Burke, recent
4 developments in the hydronic hot water distribution
5 systems that can take hot water from the gas or
6 oil-fired boiler and distribute it to rooms where heat
7 is needed?

8 A. Okay. We were aware of such systems
9 and in the time that we had to undertake this study, we
10 were not able to confirm the costs for these systems in
11 there installation in Canada.

12 They certainly do present an option which
13 may make cost-effective the conversion of houses
14 without ducts in gas-heated areas economic, and in
15 fact, I understand the systems, potentially with other
16 fuels as well, were those other fuels to be economic.

17 But at the time we did this in July,
18 while we were aware that systems existed, we didn't
19 really have cost information for Canada to work with.
20 We are certainly looking at that. Some of these
21 systems are actually being tested by our research
22 people.

23 Q. So, these systems would relate to
24 multi-storey buildings that aren't centrally heated
25 where there is electric baseboard heating at this time?

1 A. Well, I think that here is where we
2 have to emphasize. It would be my estimate at this
3 point in time that these sorts of technologies would
4 only be installed in new multi-storey buildings and
5 that they would not be retrofitted in existing
6 buildings.

7 Q. Do you have any technical reason to
8 believe that? Has been anybody come forward and told
9 you technically it's not possible?

10 A. Well, that it's very difficult to run
11 the gas lines through existing multi-residential -- we
12 are talking about apartment buildings now.

13 Q. Or multi-storey, single-family
14 residential.

15 A. Sorry. I thought you switched to
16 multi-residential buildings.

17 But yes, for more than one-storey
18 housing, single-family housing, existing housing should
19 be eligible. But I think for new buildings, new
20 multi-residential buildings, it may be a possibility
21 and there are various questions that have to be
22 resolved about the use of natural gas in
23 multi-residential buildings, but technically feasible.
24 Whereas, I think it is actually not likely to be
25 feasible to retrofit these technologies into existing

1 apartment buildings.

2 Q. Are you aware of small diameter
3 flexible plastic piping technologies that are being
4 made available in the market at this time?

5 A. Yes.

6 Q. And are you aware that they could be
7 tied into baseboard heaters with thermostats that could
8 distribute heat around houses of, say, two-stories in a
9 retrofit program?

10 A. Yes. I have already agreed to that.

11 You confused me with the use of
12 multi-residential and multi-storey, I think.

13 Q. Now, I am looking at page 6 of
14 Exhibit 292, which is page 43 of Exhibit 260, Mr.
15 Chairman.

16 I am looking at the the pie on the left,
17 Mr. Burke. In particular, I guess it would be the
18 bottom sixth on the right where it's the baseboard
19 heating one storey -- pardon me on the bottom left,
20 baseboard heating more than one storey, 167,000, where
21 gas is not available. Do you see that portion of the
22 pie? It's actually about one-third of the pie, I
23 guess.

24 A. We drew gas available pie pieces into
25 the central heating and the baseboard heating

1 one-storey, and we didn't draw that into the baseboard
2 heating more than one-storey because we were rejecting
3 that on economic grounds because of the cost of putting
4 in duct work. So strictly speaking, you would have to
5 put another line through there if you wanted to split
6 the gas available portion of the baseboard heating
7 greater than one storey.

8 And actually, I don't know whether that
9 splits 50/50 between the gas available areas right
10 now. I do know that when we looked at the data for
11 baseboard heating one storey, that that happens to be
12 split 50/50.

13 Q. Assuming that as you have in the
14 other portion of the pie that it is 50/50 for purposes
15 this discussion--

16 A. Sure.

17 Q. --we are looking at about eighty
18 three and a half thousand homes of more than one storey
19 that potentially could be retrofit with this new type
20 of technology.

21 A. Yes. It should prove to be
22 technically feasible and pass whatever bylaws.

23 It's a new technology, at least it hasn't
24 been applied in Canada except perhaps on a
25 demonstration basis occasionally, but providing it's

1 economic and all that stuff, yes.

2 Q. It hasn't been taken into account?

3 A. No.

4 Q. Okay. If we could turn to the same
5 exhibit, Mr. Chairman, at page 2 and page 3. We have a
6 copy of a document entitled "Radiant Panel Corporation
7 Hot Water Baseboard Heating Systems".

8 Panel, have any of you had the
9 opportunity to see this document before or have any of
10 you had discussions with this corporation?

11 MR. MacLELLAN: A. No, I don't believe
12 so.

13 Q. Are any of you aware of this hot
14 water baseboard technology that could replace electric
15 baseboard heating systems in homes of more than one
16 storey?

17 MR. BURKE: A. Yes, I have been advised
18 by people in our research division about the existence,
19 not particularly with brand names and so on, of such
20 technology. They were referring to some
21 outside-mounted furnace systems where the combustion
22 occurred outside the house for safety reasons, and that
23 restricted the use of the radiant panels to essentially
24 outside walls in the house. So, we have definitely
25 heard of this kind of technology. It's largely used in

1 Japan at this point.

2 Q. It's known has hydronic technology;
3 is it?

4 A. Hydronic is any system that uses
5 water to carry heat through a house. But the question
6 is: Is it locally heated by gas or centrally heated by
7 gas.

8 Radiators are a hydronic system.

9 Q. Likewise, moving on to page 4 and 5
10 of the same exhibit, we have a copy of a brochure put
11 out by the Canadian Gas Research Institute.

12 Ms. Fraser, are you aware of what that
13 institute is and whose its members are?

14 MS. FRASER: A. I can't say I am very
15 familiar with it, no.

16 Q. On page 5 of the Exhibit, in the
17 right-hand column is a little blurb of who they are.
18 On reading it, does that refresh your memory?

19 It's a non-profit organization acting on
20 behalf the gas industry, isn't it?

21 A. Yes. I am more familiar with the one
22 in the U.S. that does a lot of research.

23 Q. And as you can see when you look at
24 this brochure, there appears to be at least at research
25 institute's behest a technology, gas-fired baseboard

1 heater technology that would be ideal, as they say in
2 their heading for high-rise complexes such as
3 commercial buildings or multi-residential apartment
4 buildings.

5 A. Yes.

6 Q. And that could replace electricity
7 baseboard heating technology; couldn't it?

8 A. Yes. The penetration of electric
9 space heating in commercial buildings isn't very high
10 generally. It is in non-profit housing.

11 Q. In apartment buildings that aren't
12 non-profit, I take it it that electric baseboard
13 heaters are quite prevalent also.

14 A. The penetration isn't nearly as high
15 as the non-profit. Usually it's a gas two-pipe system
16 that's used, or an internal source heat pump.

17 Q. But it appears on the face of these
18 documents, doesn't it, that we have two technologies,
19 the hot water baseboard technology, as well as the
20 gas-fired baseboard heater that could replace electric
21 baseboard heater in residential and commercial
22 buildings of more than one storey; isn't that correct?

23

24

25

...

1 [3:05 p.m.] A. Yes.

2 Q. And that load savings has not been
3 taken into account in your demand reduction
4 projections, has it, Mr. Burke?

5 MR. BURKE: A. No, that is not correct;
6 it has, because in the commercial sector, as you may
7 recall, we said that we would switch 25 per cent of the
8 electric space heating load from electric to gas. And
9 for new, we said in Case C, there would be no new
10 electric space heating load at all.

11 As far as I am concerned, this is one
12 very good way of achieving the substitution that we
13 have already in the commercial sector.

14 Q. I thought that 25 per cent reduction
15 was only related to centrally heated buildings.

16 A. Well --

17 Q. Not to non-centrally heated.

18 A. Yes. I think the problem we are
19 going to have is identifying where we actually have
20 centrally-heated, electrically centrally-heated
21 commercial buildings.

22 So, that I think pending further analysis
23 on this, I am quite comfortable that the amount that we
24 have built in so far is not likely to be an under --
25 well, it is a reasonable estimate even with this

1 technology taken into account.

2 MR. H. POCH: Mr. Chairman, if I may have
3 one minute.

4 MR. BURKE: If you are looking for
5 Exhibit 257, we do say that, yes, centrally heated
6 electric units is what we base the 25 per cent on, but
7 that was a simple estimate that we do not know. I
8 think we cannot necessarily verify that there are that
9 many centrally heated, electrically centrally heated
10 office buildings - commercial buildings in Ontario and
11 it may be that we have overstated that amount.

12 MR. H. POCH: Q. I am concerned, Mr.
13 Burke, with the 75 per cent of the commercial buildings
14 that are heated by baseboards right now that may have
15 these new types of technologies made available to them.

16 Have you taken into account that 75 per
17 cent?

18 MR. BURKE: A. No. We have assumed that
19 it will be too expensive to retrofit those buildings.

20 Q. But you haven't done an analysis.
21 You have just assumed that, correct?

22 A. That is essentially correct.

23 Q. Now, assuming Mr. Burke, that you
24 aren't correct, what portion of the pie showing
25 baseboard heating in more than one storey of 167,000

1 units - and again, we are at page 6 of Exhibit 292 -
2 could utilize those new technologies, where?

3 A. Now you are back to the residential
4 sector?

5 Q. Yes.

6 A. Okay.

7 Q. Low rise.

8 A. I thought we already agreed on the
9 amount for the residential sector.

10 Q. Eighty three and a half thousand
11 units?

12 A. Yes, half of the baseboard heating
13 greater than one storey portion, if we were to stick to
14 the analysis to gas as the alternative.

15 Q. But if you used other fuels as the
16 alternative, would that be --

17 A. Yes, that was the policy question
18 that was on the table.

19 Q. Okay.

20 A. Effectively, it represents a one
21 third increment in the result.

22 Q. In looking at --

23 A. It is a 50 per cent increment, an
24 extra third.

25 Q. That is right. In looking at page 7

1 of the same exhibit, which is page 44 of Exhibit 260,
2 Mr. Chairman, I would translate that eighty three and a
3 half thousand extra residential units to have a fuel
4 switching potential savings of half of the 13,750
5 kilowatthour per unit and half of the potential of 961
6 megawatts; is that correct?

7 A. Yes.

8 Q. So we are talking effectively, a
9 potential reduction of just under 500 megawatts that
10 you haven't taken into account yet.

11 A. Yes, and we haven't taken it into
12 account because it doesn't satisfy one of the criteria
13 we use in our analysis, which is the cost of
14 performance of this technology is not -- we don't know
15 what it is. Maybe other people know. Maybe other
16 people think it can be used in the Canadian context.
17 But as far as we know, at this point, its not licensed
18 for use and we don't know the cost of it in real world
19 applications in Canada. So, when we do, we will
20 certainly be taking it into account.

21 Q. Mr. Chairman, I would now like to
22 turn to Volume 48 of the transcripts, page 8781,
23 starting at line 16.

24 Mr. Wilson, I believe that Dr. Connell
25 was asking you a question here. Moving on to the top

1 of page 8782, you responded down to line 19 and the
2 question related to issues in the context of urban
3 planning.

4 Do you recall that questioning and -
5 response, sir?

6 MR. WILSON: A. Yes, I do.

7 Q. And at line 5 on page 8782, in your
8 response you state:

9 "Well, to my knowledge, such
10 improvements or opportunities are not
11 included in our estimates of efficiency
12 or load reduction opportunities."

13 A. Yes.

14 Q. May I ask why they aren't included?

15 A. I think the essential answer to your
16 question is that we don't anticipate significant change
17 in urban design within the next seven or eight years
18 that will make a material difference to the demand
19 for electricity. Mr. Burke may be able to elaborate
20 on that for the longer range.

21 MR. BURKE: A. I think simply, we
22 haven't studied.

23 Q. So you haven't had discussions with
24 the various municipalities that may enact zoning bylaws
25 related to this area or other types of bylaws?

1 A. Well, what you are suggesting is that
2 it is not that the houses themselves have certain
3 thermal characteristics, but it is the way the houses
4 are arranged, the urban design that actually causes the
5 energy savings.

6 Is that what you are getting at?

7 Q. I believe that was the context of Dr.
8 Connell's question.

9 A. Yes.

10 Q. And that part of it we haven't
11 studied.

12 Q. But it could be both, sir.

13 A. Well, the proportion that has to do
14 with how the houses themselves are built has to do with
15 building codes and all that sort of thing. And to that
16 extent, we consider whether it is going to have
17 naturally or through our demand management programs
18 that we will have -- and potentially, we consider the
19 inclusion of thermal envelope upgrades to the economic
20 level.

21 Whether urban areas would pass rules, I
22 am not sure whether it is even in their jurisdiction
23 frankly, but that sounds like it really is a provincial
-24 matter that would be covered by the Ontario Building
25 Code, but perhaps they can be passed locally, I don't

1 know.

2 Q. But you haven't had discussions with
3 the various municipalities about the opportunities that
4 could arise to reduce energy demand through
5 implementation of zoning controls, the zoning bylaws?

6 A. No, I haven't.

7 Q. Okay. Mr. Chairman, I would now like
8 to move to Exhibit 293, that is the orange page that I
9 introduced this morning, and follow up on that, Exhibit
10 294, which is the blue page. And Mr. Kelly has
11 overheads for the benefit of the audience and Mr.
12 Shalaby, if he wishes.

13 Mr. Wilson, what we have attempted to do
14 here is graphically represent the broad areas of
15 testimony that were covered in chief just to try to
16 simplify the various matters.

17 Have you had an opportunity to review
18 this diagram?

19 MR. WILSON: A. I have looked at it for
20 a couple of minutes, yes.

21 Q. Yes. And you can see there are five
22 tiers, and the bottom tier sets out a technical
23 economic potential for demand management. That is what
24 it represents.

25 And there has been discussion of that in

1 testimony, correct?

2 A. Yes, there has.

3 Q. We are not here to debate the size of
4 the blocks.

5 A. No, I didn't think we were.

6 Q. No. Or, for that matter, the
7 colouring necessarily.

8 The second tier are the types of demand
9 management that Ontario Hydro has discussed in
10 evidence. And if I am correct, and please correct me
11 if I am wrong, the second tier captures all of the
12 types of demand management, the fuel switching, load
13 reduction through EEI, load shifting and discount
14 demand service.

15 A. Yes, that's correct.

16 Q. Albeit, there is no overlap shown on
17 this diagram between fuel switching and EEI. Load
18 reduction, I recognize that.

19 The next tier up the page is program
20 mechanisms and this represents the demand management
21 programs that are delivered. And if I am not mistaken,
22 your evidence essentially came down to that these
23 programs were delivered through information and audits
24 and financial incentives, is that correct, with the
25 assist of it at least, those matters?

1 A. Those are two of the major building
2 blocks. Ms. Fraser outlined 11 in total in her chief
3 evidence.

4 Q. Well, these are the two major blocks
5 that Ontario Hydro is involved with?

6 MS. FRASER: A. No. I went over the 11
7 different elements that our programs include and they
8 are much broader than this.

9 Q. Okay. The next tier represents
10 Ontario Hydro as the delivery agent of demand
11 management programs?

12 A. I, also, in my direct evidence
13 indicated that the leverage strategy, and I think all
14 the witnesses talked about the leverage strategy, and
15 how we -- I think we had probably about eight or nine
16 different groups that we expect to deliver programs
17 through.

18 Now, if you want to say who has got the
19 money to do it, that is a little different.

20 MR. BURKE: A. I know it is like that
21 in Exhibit 258. There is a change in tone, I think, in
22 what we are advocating as our potential and attainable
23 now from what Ontario Hydro expects to achieve to what
24 we expect to be achieved in the Province of Ontario by
25 a variety of means.

1 Certainly, Scenario C implies government
2 standards and regulations and so on as part of the
3 progress or ways of implementing demand management and
4 we are not restricting ourselves in that case at all to
5 our own programs.

6 Effectively, the perspective is,
7 especially under the current government, that the
8 Ministry and the government itself in combination with
9 Ontario Hydro will achieve savings for Ontario.

10 Q. The next tier shows that Ontario
11 Hydro usually will only fund up to 50 per cent of EEI
12 incremental costs.

13 MS. FRASER: A. That is what it shows,
14 however--

15 Q. Usually.

16 A. --the Undertaking 267.2 which was
17 filed this morning indicates that of our current
18 approved programs in the PCRD, the actual incentive
19 cost is a proportion of the participants' costs is 64
20 per cent. And if you look at the programs that are
21 more recently approved as opposed to earlier approved,
22 you are getting up much higher.

23 Q. Is that a weighted average or a
24 straight average? I haven't had the opportunity to
25 take a look at the transcript undertaking.

1 A. It is just a simple average. I never
2 do anything complicated.

3 Q. So that would be a simple average
4 across programs?

5 A. Yes.

6 Q. But not across the potential, but not
7 across potential programs?

8 A. No, it is existing approved programs.

9 Q. Okay. So aside from the comments
10 that you, as a panel, have just made, this, I take it,
11 fairly represents one way of looking at the achievable
12 demand management potential?

13 A. Well, actually, I think your Exhibit
14 294 almost captures the way in which we look at it.

15 Q. Okay, let's move move to that. That
16 is why I wanted to question you on it a little more
17 closely.

18 Now this captures what I have on the
19 previous exhibit, 293, and then it incorporates further
20 blocks.

21 A. Yes. I am really glad you put us
22 right in the centre.

23 Q. You would agree that the blocks that
24 are shown are potential types of demand management
25 program mechanisms, delivery agents and cost scenarios

1 that could lead to achievable demand management
2 programs; is that correct?

3 A. Yes, and I think we have covered
4 almost every one of them in here in discussions and
5 saying that we are doing them or planning to do them
6 with the exception of reimbursement of lost revenues to
7 municipal utilities.

8 Q. And we will get to that a little
9 later in the cross-examination.

10 MR. BURKE: A. I would like to observe
11 that some of the types of demand management, the only
12 type you have really added to the list that we have
13 includes things either for which the cost are unknown
14 or they are not economic or they are, in fact, fuel
15 switching.

16 Q. There is potential there, though?

17 A. But not economic potential.

18 Q. So this, in your mind, Ms. Fraser,
19 fairly represents what is termed as the achievable
20 demand management scenario in graphic form, would you
21 agree?

22 MS. FRASER: A. I would say this is
23 beginning to represent the broad based way in which we
24 think of demand management as becoming a way of doing
25 business in the province and that Ontario Hydro is

1 going to take a leadership role in doing that.

2 Q. Now let's look at, for example, the
3 delivery agents line.

4 Yes, Mr. Wilson, I am sorry?

5 MR. WILSON: A. May I add to that?

6 Q. Yes.

7 A. In the program mechanisms, we are
8 already exercising a direct action kind of campaign on
9 an experimental basis in Espanola and through programs
10 such as the water heater tune-up exercise. That is
11 direct action. And so it should have been coloured
12 with a shaded colour and put into the centre.

13 In a delivery agency area, I am not going
14 to repeat it all here, but I presented our view that to
15 be really effective, we have to go beyond working with
16 just municipal utilities and so on. We have to work
17 with service clubs, churches, community action groups,
18 schools, trade associations, architects, consulting
19 engineers, all levels of government, quite a long list.

20 Q. Yes, I remember.

21 A. So I think it was a couple of blocks
22 that you have got missing on this line.

23 Q. I didn't have enough room, sir.

24 A. Well, it was sort of the the symmetry
25 of the picture too, I think, but I think it understates

1 the complexity that we think is necessary to be
2 effective.

3 MS. FRASER: A. We would also add the
4 manufacturers, contractors, consulting engineers,
5 architects, retailers, et cetera.

6 MR. BURKE: A. It could have been a
7 demand management tree instead of a pyramid.

8 Q. As to the delivery agents though, you
9 don't have any direct control over the municipal
10 utilities, do you?

11 MS. FRASER: A. That is what our
12 strategy has to do with leverage rather than control.

13 Q. And --

14 MR. MacLELLAN: A. However, we do use
15 them as delivery agents for a program such as the water
16 heater tune-up program where we fully fund it. We
17 provide all the advice, training, guidance, but the
18 utility hires the people to do the tune-ups and
19 actually implements the programs.

20
21
22
23
24
25 ...

1 [3:25 p.m.] Q. Isn't that program, for instance,
2 going discontinued in short order?

3 A. It's at the end of the year. It's
4 been going for about two years now and will be
5 superseded by another type of home tune-up program.

6 Q. But there is cost to the other
7 delivery agents aside from yourself, and in fact, you
8 don't have any actual control whether or not they are
9 going to deliver the programs that you would like to
10 see delivered; isn't that correct?

11 A. To your first question, we pay 80
12 per cent and they pay 20 per cent. That 20 per cent is
13 actually seldom out-of-pocket expense; it's usually
14 their administrative effort of their staff.

15 As for direct control, no, we sign an
16 agreement with the utility where they agree to do a
17 certain number of tune-ups in a given year or during
18 the program period, but we don't have anything to hold
19 over them if they don't meet those targets.

20 Q. Okay. If I could just move to the
21 Espanola situation, the test case. I would like to
22 draw on testimony from witness Panel 3 under
23 cross-examination where it was stated that the
24 approximate cost of reactivating the Hearn for a three
25 year period would be \$149 million.

1 Mr. Shalaby, do you recollect that?

2 MR. SHALABY: A. Not exactly, but let's
3 see what the question is and whether I need to know the
4 date of the transcript.

5 Q. Assuming that number to be correct,
6 if Ontario Hydro were to instead spend that \$149
7 million on demand management programs within the City
8 of Toronto in a program that's comparable to the
9 Espanola test case, have you calculated the electricity
10 reductions that would result?

11 A. No. And I point out that Ontario
12 Hydro is not returning the Hearn units into service at
13 this time. So, that money is not fully to be spent.
14 Some money is being spent on removing asbestos and
15 other things, but to my knowledge that project has been
16 put on hold.

17 Q. Is that money available for demand
18 reduction in the City, electrical efficiency
19 improvement programs within the City?

20 A. I don't know that this money has been
21 authorized for anything, so...

22 Q. Mr. Wilson?

23 MR. WILSON: A. I will repeat the answer
24 I gave to a similar question sometime ago, and that is
25 that they are no piles of money sitting around for good

1 ideas.

2 We have just experienced an announcement
3 of a rate increase that I am sure that nobody liked the
4 sound of. The money comes from customers and if we can
5 find a good use for it, we think that's the most
6 effective think to do then we will proceed, even though
7 that sometimes causes rate increases.

8 I can't really see the suggestion that
9 this money from Hearn is just sitting, waiting for a
10 good from Toronto. If Toronto has got good ideas, we
11 are open for business.

12 MR. H. POCH: Mr. Chairman, I will move
13 past item 9, onto item 10, on the outline of
14 cross-examination, which is Cost-Effectiveness of
15 Demand Management Expenditures.

16 Q. Ms. Fraser and Mr. Burke, I would now
17 like to refer back to bundling of technologies, and in
18 particular, to Volume 48 of the transcript.

19 Mr. Chairman, will we be taking a break
20 this afternoon?

21 THE CHAIRMAN: That's up to you. If you
22 would like to take a break, we will take one; if you
23 want to finish up your cross-examination, you can
24 finish it.

25 MR. D. POCH: I would prefer to go right

1 through, if that's okay with the Board.

2 THE CHAIRMAN: That is fine.

3 MR. D. POCH: Q. Ms. Fraser, before
4 referring to the transcript, can you describe how
5 several of your programs for the commercial sector,
6 take account or encourage bundling of various
7 technologies in a given building to produce a
8 cost-effective package of measures?

9 MS. FRASER: A. The very nature of
10 savings by design is such that we look at the total
11 system design for a new building, or if it's a retrofit
12 situation, there may end up being some technologies in
13 and of themselves that may not be cost-effective. But
14 what we do is a screening in that customized process
15 against our avoided cost to make sure that the project
16 itself passes the total customer cost test.

17 In other situations, for example, one of
18 the large office towers downtown was interested in
19 putting window film to reduce their HVAC load.
20 However, the type of window film that the City bylaws
21 required them to put on, which would maintain the
22 aesthetics of the building required window film that
23 was not cost-effective from the total customer cost
24 test. What we did there of there was essentially say
25 that the cost of normal window film which would pass

1 the total customer cost test was then the kind that we
2 would -- was within the costs that we would assess
3 against the avoid the cost, i.e., and have it pass, and
4 that the incremental cost of the window film that was
5 not economic was there for aesthetic reasons, not for
6 energy saving reasons, and in that way we made sure
7 that project passed. So, there are a number of
8 different ways.

9 Q. The guaranteed energy performance
10 program is another type of program where bundling of it
11 technologies can take place; is that correct?

12 A. That's the very nature of the
13 guaranteed energy performance program as well in that
14 it's what energy service companies, the approach they
15 take. And what we are trying to do there is to get
16 them to look at the longer term things that would not
17 necessarily be within their three or four year payback
18 criteria that they usually use.

19 Whether or not there would be uneconomic
20 things in that bundle or not will remain to be seen as
21 we move through the projects. We currently have 50
22 projects, I believe, in feasibility study accounting
23 for about -- no, 50 projects accounting for 20
24 megawatts.

25 Q. And why do you encourage the bundling

1 concept?

2 A. In the commercial sector, a building
3 is really a total system. The bundling there is real a
4 sense of trying to get the synergies from interactive
5 systems working together, and also really so we don't
6 double count savings. So, we are not layering things
7 on that are actually saving things on top of one
8 another, because there may actually be offsetting
9 impacts sometimes such as in buildings that aren't
10 cooling year-round, we may be losing some heating gains
11 and things like that. So, it's really from a practical
12 point of view.

13 Q. Are you attempting to capture both
14 technical as well as financial synergies when you
15 bundle technologies?

16 A. Yes, I would say that we are.

17 Q. Mr. Burke, in your evidence in chief
18 you rejected, if I not mistaken, bundling or combining
19 of techniques at the point of total customer cost test.
20 I refer to you you will Volume 48, page 8732, starting
21 at line 16, towards the end of that question at line
22 20.

23 "Does Hydro bundle uneconomic measures
24 with economic measures when calculating
25 potential?

1 This was your answer, I believe:

2 "No, Hydro's doesn't. We have applied
3 the total customer cost test to each
4 individual technology."

5 I just heard Ms. Fraser say that the
6 total bundle of technologies meet the total customer
7 cost test; is that correct?

8 MR. BURKE: A. What I heard Ms. Fraser
9 to say is that the bundle technologies, because that
10 makes sense from a synergistic point of view, just as
11 we have a certain level of bundle the technologies in
12 our estimate of potential, because as you know our
13 estimate of potential is done on a total building
14 package basis.

15 The issue is strictly the one which is
16 addressed in the transcript, which is, do you include
17 uneconomic measures in the bundle. And so that's not
18 necessarily something one -- bundling is good concept;
19 we use it. The question is, should you use the
20 uneconomic measures.

21 My understanding in discussions was Ms.
22 Fraser is that she does it occasionally when it is
23 necessary, but essentially the attempt is to have the
24 economic result that we think is desirable, that is
25 that each of the measures is economic. And

1 occasionally there may be no useful way of excluding an
2 uneconomic measure.

3 We are not particularly going out,
4 seeking uneconomic measures and programs and then
5 bundling them together with economic measures in order
6 to come up with a package that still meets the total
7 customer cost test. Now it could be we are going to
8 find that that's not true when Ms. Fraser answers. But
9 my sense is that for expediency purposes sometimes, it
10 may not be worthwhile trying to exclude some uneconomic
11 measures in a practical case.

12 It's not like at all that there is a
13 whole different supply curve that Ms. Fraser is looking
14 at from the one that we are of load reduction
15 techniques and that they include a whole lot of
16 uneconomic measures and that these are being included
17 in programs which are not reflected in our potential.

18 There are unique applications of
19 technologies which for particular situations may not be
20 economic, but nonetheless, it's difficult to exclude
21 them from a package for a particular building.

22 That's my understanding. Certainly, I
23 still support what I said here, and I don't know
24 whether Ms. Fraser would feel there is a significant
25 inclusion of uneconomic measures in programs.

1 Q. Ms. Fraser?

2 MS. FRASER: A. No, I don't think it's
3 significant at all. I think it is really a practical
4 consideration. The last thing we would want to do is
5 give the marketplace an idea that we weren't reasonable
6 people.

7 Q. Ms. Fraser, your goal is to increase
8 demand management?

9 A. Absolutely.

10 Q. And accordingly, you would agree, I
11 take it, that if a technology is marginally uneconomic
12 but can be bundled in to a program, that should occur?

13 A. Well, I think that in terms of the
14 application, I think as a general rule, probably not.
15 It depends on how much uncertainty we have with respect
16 to the cost and a whole bunch of things that Mr. Burke
17 talked about.

18 I don't think there are a lot that are on
19 the far horizon in terms of commercial. I think it is
20 really a matter of when we used the example early on,
21 that T8 lighting in religious buildings was uneconomic
22 as a general rule; however, our program doesn't exclude
23 that, because if a church was actually used in a way
24 that was different in terms of the hours of operation
25 and that, it would make sense to the customer, it would

1 be uneconomic from our point of view.

2 So, it's really a water matter of trying
3 to draw boundaries around programs so that we are not
4 sort of doing unnatural things in the marketplace, if
5 you will.

6 It could be situations where the
7 storeroom light isn't on enough hours a day to make it
8 economic, but in order to make sure that the whole
9 inventory of lighting for that building is switched
10 over to something else, we would also recommend that
11 those lights get changed as well.

12 MR. H. POCH: Mr. Chairman, I would now
13 look to Exhibit 290. Turning to pages 32 and 33, these
14 are extracts from the OEB report, HR 20, released late
15 last month.

16 Q. Paragraphs 3.3.14 through 3.3.16,
17 Panel, deal with the total customer cost test. And,
18 Mr. Wilson, have you had an opportunity to review the
19 Board's report on these pages?

20 MR. WILSON: A. Yes, I have but I
21 haven't read it in the last day or so.

22 Q. And the Board, the OEB, raised three
23 concerns about Ontario Hydro's use of the total
24 customer cost test. The first one in paragraph 3.3.14,
25 that Ontario Hydro has not adequately dealt with the

1 distributional impacts of the transfers of cash between
2 participating and non-participating customers.

3 Do you have any comment on the Board's
4 statement here, Mr. Wilson?

5 A. I disagree with the Board's position
6 on this matter.

7 They are imagining, I think, a
8 substantive transfer of wealth from non-participants to
9 participants.

10 As we have said here, our overall
11 objective is to make everybody a participant, which
12 over time should make everybody better off and no one
13 worse off.

14 But even to the extent where that's not
15 successful, or 100 per cent successful, our estimate of
16 the impact of our programs on electricity rates is not
17 large, and it is something of the order of a 5 per cent
18 difference in price over the long term.

19 Where we are experiencing year over year
20 rate increases as we have sort of in the 10 per cent
21 range, looking at a rate differential over the long
22 term of a 5 per cent difference, it's not 5 per cent
23 more every year; it's 5 per cent difference in the
24 levels, it ceases to -- I don't think it's a big issue.
25 It's one that we are concerned about, but I don't think

1 it is as big a concern as the Board feels it is.

2 Q. Moving on to paragraph 3.3.15 on the
3 same page, as noted in the Board's Report, it is raised
4 by Energy Probe's witness Dr. Ruff, the use of the
5 total customer cost test may result in Ontario Hydro
6 funding uneconomic energy management programs as the
7 test does not take into account customer costs that are
8 difficult to quantify.

9 Again, Mr. Wilson, do you have any
10 comment or does any other member of the panel have any
11 comment on that finding?

12 A. Well, I don't share Dr. Ruff's
13 concern. The kinds of costs that are difficult to
14 quantify are the kinds of things that he has listed and
15 discussed, like the cost of climbing the stepladder to
16 change the light bulb, the cost of going through the
17 brochures to figure out which is the best buy. I
18 really don't think these are really significant in
19 people's minds, at least they aren't in mine.

20 Q. Moving on to paragraph 3.3.16, on
21 pages 32 and 33 of Exhibit 290. Again, as raised by
22 Energy Probe at the OEB, one of the OEB's concerns set
23 out there is that total customer cost test justifies
24 programs with no planned long-term savings.

25 Again, do you have any comments on that?

1 [3:45 p.m.] Now, this, in no way, makes it
2 uneconomic. In fact, if it was uneconomic, we wouldn't
3 be doing anything with the programs.

4 Further, they ignore the information that
5 we gave them and we gave to this Board as well, is that
6 opportunities to do cost-effective demand management
7 programs which materialized last fall as the more funds
8 became available certainly allowed us to move ahead on
9 areas where previously we wouldn't have been able to
10 say with confidence we could spend money well.

11 Q. Moving back two pages in Exhibit 290,
12 to pages 29 and then 30 of the OEB report, HR20, at
13 paragraph 3.3.11.

14 Again, Mr. Wilson, the Board notes its
15 concern with the cost-effectiveness of Ontario Hydro's
16 energy management initiatives and as stated in that
17 paragraph:

18 The additional expenditures will not
19 result in short-term pain for long-term
20 gain but as short-term pain for little or
21 no gain.

22 Do you have fully comment on that?

23 A. I think perhaps I have already
24 answered this question. I don't --

25 Q. Do you have any further comment than

1 what you have said?

2 A. There are benefits to Ontario to
3 reduce electricity demand right now and you don't have
4 to wait until the year 2000 to obtain a benefit.

5 I think some of your questions earlier
6 today suggested that if we could reduce demand, we
7 would reduce the combustion of coal and emissions of
8 different gases in the atmosphere and that would reduce
9 costs, so all in, it is a sensible thing to do.

10 Q. The OEB also notes that it is
11 concerned with the program cost-effectiveness and that
12 commercial and institutional programs should -- demand
13 management programs should take precedence over
14 residential programs.

15 Do you have any comment on that, Ms.
16 Fraser or Mr. Wilson?

17 MS. FRASER: A. I would say overall that
18 for the reasons that Mr. Wilson talked about earlier,
19 in terms of having that balanced portfolio so all
20 people in the province could participate, I think it is
21 very important to have a balanced portfolio of programs
22 across all three sectors.

23 We are going after all the economic
24 demand management we can get. As long as it is
25 economic, we want to get it, and that includes

1 residential.

2 Sometimes the cost per kilowatt is higher
3 than what appears in industrial and commercial;
4 however, the benefit sometimes lasts a lot longer.
5 Thermal upgrades to a house, for example, will last the
6 lifetime of the house.

7 The way in which we market to the
8 residential sector with mass promotion, mass
9 advertising sometimes leads the pattern of expenditures
10 to look different than they really are over the long
11 term.

12 When the OEB is looking at a particular
13 rate year, they are looking at a pattern of
14 expenditures in one particular year. Very often the
15 costs involved in one year are investments that will be
16 reaped two and three and four years later. I think it
17 is very important to take a much more holistic view of
18 the way in which we are going about doing that.

19 As the manager of commercial programs, I
20 know I rely on the increased awareness that comes from
21 the mass marketing approaches used in residential to
22 increase awareness in the commercial and industrial
23 markets with the business decision-makers because most
24 of them are all homeowners as well. So, it really
25 requires a much more broader perspective than is taken

1 in a particular rate case, I think.

2 Q. Okay. Moving to page 34 of this
3 exhibit, which is page 35 of the OEB report, paragraph
4 3.5.2, the OEB refers to the Municipal Electric
5 Association's concern that Hydro's efforts should be
6 focused towards energy efficiency improvements instead
7 of fuel substitution.

8 Do you have any comment on that?

9 MR. WILSON: A. I think our evidence is
10 that we are going to focus our attention on energy
11 efficiency and that fuel substitution is going to
12 become part of our program mix but only after an
13 adequate study of economic, social and environmental
14 impacts.

15 A long extensive suggestion is studying
16 it for a number of years before we act. I don't think
17 that is going to happen. We will be acting quite a bit
18 sooner.

19 Q. I would like to move on to the lath
20 topic in the outline, Mr. Chairman, which is municipal
21 utilities' involvement.

22 Ms. Fraser, would you agree that the
23 success of Hydro's demand management programs depends
24 on assistance from the MUNIES, municipal utilities, and
25 that without their full cooperation and assistance, the

1 demand management forecasts may not be met?

2 MS. FRASER: A. Well, if we don't get
3 their assistance, we will have to look at some
4 alternatives. With more assistance from the municipal
5 utilities, we can be more successful.

6 Q. At page 7-2 of Exhibit 3, for
7 instance, it is stated that the cooperation of the
8 MUNIES is critical to the delivery of successful demand
9 management program. The word "critical" stuck out like
10 a sore thumb.

11 Would you agree with that, that it is
12 critical, their assistance is critical?

13 A. I believe that is what I stated in my
14 direct evidence.

15 Q. Okay. And how long do you anticipate
16 it to be before the municipal utilities get fully
17 involved in delivering demand management programs?

18 A. Well, I also said in my direct
19 evidence that the circumstances and the capabilities of
20 municipal utilities vary greatly. There is over 300 of
21 them; some are small, some are large. We already have
22 a lot of municipal utilities working on demand
23 management. There is the demand management committee
24 of the Municipal Electric Association that reviews
25 products.

1 I think there is issues that we are
2 trying to hammer out with respect to the amount of
3 involvement of municipal utilities in the design of
4 programs and the communication protocols and things
5 like that, too, as we roll programs out.

6 I would characterize those more as issues
7 of detail rather than issues of substance.

8 Q. Okay. Perhaps we can move to some of
9 those, as you call it, issues of detail instead of
10 issues of substance. If you would be kind enough to
11 turn to page 74 of Exhibit 290. This is in answer to
12 Interrogatory 4.9.20 from the MEA.

13 Perhaps, Mr. Chairman, if we could give
14 this an interrogatory number.

15 THE CHAIRMAN: 4.9.20?

16 MR. H. POCH: Yes.

17 THE REGISTRAR: 261.42, Mr. Chairman.

18 THE CHAIRMAN: Thank you.

19 ---EXHIBIT NO. 261.42: Interrogatory No. 4.9.20.

20 MR. H. POCH: And this response appends a
21 market research study entitled, "Study of 1990
22 Municipal Utilities' Service Relationships Surveyed,
23 December 1990", and it was conducted on behalf of
24 Ontario Hydro by Price-Waterhouse.

25 Q. Are you familiar with that document?

1 Is anyone familiar with that document?

2 MR. WILSON: A. Yes, I am.

3 Q. Yes, I see. I thought I saw your
4 name on one of these documents.

5 This document comprises pages 74 through
6 86 of this exhibit.

7 Mr. Wilson, I will direct these series of
8 questions to you and if anyone else on the panel has
9 any remarks, I would appreciate hearing from you.

10 This document was a canvass by Ontario
11 Hydro's consultants, if I am not mistaken, Mr. Wilson,
12 or some municipal utility chairmen and general managers
13 about a number of matters, and particularly, energy
14 management issues; is that correct?

15 A. Yes, that's right.

16 Q. And on page 1, which is page 76 of
17 Exhibit 290, the background and the objectives to the
18 study are set out. And under background, the results
19 of the study are said to be used or will be used in a
20 certain manner.

21 Are those still the goals at this time?

22 A. Yes, they are.

23 Q. Okay. And the objectives set out
24 below that, are they still the objectives of the study
25 or were they accurate objectives of the study?

1 A. Yes, that's right.

2 Q. And the findings of the study are
3 summarized on pages 77 through 80, Mr. Chairman. I
4 would like to highlight, Mr. Wilson, several of those
5 findings and ask for your comment on them, if you have
6 any.

7 The first is found on page 77 under the
8 heading, "Service Summary", and it states:

9 "Reliable electricity supply and power
10 quality are key areas of importance for
11 municipal utilities."

12 Of the ten service areas respondents
13 were asked to rank in importance,
14 reliable electricity supply heads the
15 list by a substantial margin, followed by
16 high power quality and reasonable
17 wholesale prices. Energy management
18 programs are ranked second to last and
19 regulatory assistance is the least
20 important service area of the ten."

21 Do you have any comment on the second
22 last ranking of energy management programs and whether
23 Ontario Hydro will be attempting to deal with that?

24 A. Yes, I have got two comments on that:
25 The first is that of the services that were listed for

1 the general managers and the chairmen to respond to,
2 there were no unimportant service areas. We didn't
3 fluff the list up with ten or so things that were
4 unimportant to them so that energy management would
5 show up at the top of the list. So to be second to
6 last, I think, is not a disgrace but it is no honour
7 either.

8 I would just point out perhaps that
9 general managers of municipal utilities enjoy our help
10 in regulatory matters the least of all. We basically
11 tell them what they can't do. And so to expect that to
12 be last is perhaps natural.

13 To expect energy management to be second
14 to last is not where we would like it to be.

15 Energy management is an endeavor in
16 Ontario and for Ontario Hydro, although it is
17 relatively new, certainly in terms of incentive
18 programs. And although we have had a long, long
19 relationship with municipal utilities as service
20 givers, this demand management activity is new
21 territory.

22 We haven't had an opportunity in the last
23 about 26 months to involve 350 municipal utilities on a
24 personal basis in program design discussion of
25 objectives and so.

1 Q. Wouldn't you agree that it would be
2 appropriate to better educate and inform the general
3 managers as well as the chairmen of these municipal
4 utilities of the demand management programs?

5 A. I agree completely and that is
6 exactly what we are doing.

7 This is one of the responses, I think,
8 both to this and a previous survey which really
9 suggested the same level of ambivalence really about
10 demand management particularly as -- it is not
11 intuitively attractive to many of these people, that we
12 should be endeavouring to convince people to buy less
13 of their product.

14 Q. So that is a problem.

15 A. That is a problem. It is becoming
16 less of a problem as their education improves.

17 Q. And that problem is really reflected
18 on page 80 in this exhibit.

19 A. I just might add that, although these
20 individuals sometimes have difficulties with the way in
21 which we go at it, when we meet together as the
22 Municipal Electric Association in each of the last
23 several years, their general meeting has passed
24 resolutions encouraging us to proceed with all due
25 haste and to do an excellent job and yes, to involve

1 them more.

2 Q. We will refer to those resolutions
3 momentarily.

4 A. Okay, fine.

5 Q. On page 80 of Exhibit 290, the
6 penultimate paragraph, the second sentence really
7 captures what you said, where it says:

8 "General managers expressed a concern
9 that energy management programs would
10 reduce the revenues."

11 That is a major concern with the MUNIES,
12 isn't it?

13 A. Yes, that is a concern that they are
14 expressing. I think as we move our education exercise
15 more effectively to them, and I suspect even since this
16 survey was done, that has happened. They realize that
17 our efforts will not so much reduce the revenues as
18 slow the rate of growth of their revenues. Some of the
19 early reactions to these programs was that the revenues
20 would drop. It is certainly not expected to be the
21 case.

22 Q. But there have been resistance to
23 demand management, the institution of demand management
24 programs through the MUNIES because of this perceived
25 loss of revenue?

1 A. Well, there are an awful lot of
2 municipal utilities and there are an awful lot of
3 views.

4 Q. But it appears to be a major concern
5 as set out in this document, doesn't it?

6 A. There was a concern expressed and
7 it's a heart felt concern.

8 Q. Could Ontario Hydro ensure the
9 MUNIES' commitment to delivering demand management
10 programs on behalf of Ontario Hydro if there was a
11 compensating of lost MUNI revenues?

12 MS. FRASER: A. The issue here would be
13 if we compensate them in programs where there was lost
14 revenue, would they be willing to ante up for programs
15 where they make revenue gains.

16 In actual fact, if you take the
17 distributor rate impact tests for all the current
18 approved programs in the program concept reference
19 document, the net benefit on that distributor rate
20 impact test is actually \$185 million to the good for
21 the distribution utilities.

22 That is clearly a fact that we have to
23 communicate through them a little better, that there
24 are two sides to it. It is something that we have
25 discussed both years in the past at the Ontario Energy

1 Board rate hearings.

2 Q. Is that a cash profit to the MUNIES?

3 Can they actually distribute it?

4 A. No. It is avoided cost the same way
5 that we have avoided costs. We don't have a pot of
6 money. It is avoided distribution costs from -- and in
7 some cases, it may be reductions in negative net
8 revenue from certain loads.

9 Q. The MUNIES have sunk costs already in
10 their distribution system. This \$185 million revenue
11 that you are talking about really couldn't go to reduce
12 those sunk costs, could it?

13 A. No. They are avoided costs, the same
14 way ours are avoided costs. That is not the issue.
15 There is lots of additional growth still happening.

16 Q. So, it really reduces the potential
17 future costs to the municipality or to the MUNIES, not
18 the existing costs?

19 A. That's right. It is avoided cost,
20 and that would also include though -- could be avoided
21 power purchases from Ontario Hydro. It depends on how
22 their load shape interacts with the load shape of the
23 savings from the program. And for instance, a lot of
24 the commercial programs reduce load right off the major
25 municipal utilities' peaks because of the -- for

1 instance, a lot of the Southern Ontario municipal
2 utilities are summer peaking. And the extent to which
3 we reduce lighting which is a year-round load, thermal
4 cool storage, which is higher savings in the summer
5 than in the winter, those benefits are significant to
6 the municipal utilities.

...

1 [4:05 p.m.] That's one of the reasons why one of the
2 first programs in the commercial bundle was thermal
3 cool storage because we recognize there it would be
4 attractive to the major municipal utilities and we
5 wanted to encourage both their participation in demand
6 management programs and the likelihood of them moving
7 time-of-use rates down to their customers who had less
8 than 5 megawatt loads.

9 Q. Which municipalities are you talking
10 about what you say that they are summer peaking? It's
11 not just the City of Toronto then.

12 A. Not just the City of Toronto, no.
13 There are quite a few that are summer peaking or summer
14 critical.

15 MR. BURKE: A. There was an undertaking,
16 I believe, that was filed in Panel 1 that lists the
17 summer peaking municipal utilities.

18 Q. Do you know if that's been answered,
19 sir? I'm sorry, I...

20 A. believe it has, yes. I don't know
21 the number offhand.

22 Q. We'll search the transcript.

23 Essentially, Ms. Fraser, what I see
24 happening is Ontario Hydro going out to MUNIES and
25 saying, "Help us deliver demand management programs.

1 You are going to lose some revenues, you will gain
2 revenue also through avoided costs," as you have
3 stated, "You will lose revenues and you are also going
4 to incur staff cost, labour cost, hard costs in helping
5 us implement Ontario Hydro's demand management
6 program."

7 MS. FRASER: A. In terms of the latter
8 costs, we are right now in the process, there is a task
9 force for large utilities and Ontario Hydro together to
10 work out the details to develop a broad based policy
11 for us to compensate them for the direct costs that
12 they will incur, similar to what we do for the water
13 heater program, so we don't have to work it out program
14 by program. We are looking at an overview kind of
15 process.

16 Q. Are you looking at 100 per cent
17 reimbursement, 80 per cent reimbursement? What
18 percentage?

19 A. From the files I think it is full
20 directory reimbursement is what we are looking at.
21 It's just a mechanism of how we measure that. Their
22 accounting systems may not track all the costs, and so
23 we are working that out with memorandums of
24 understanding and whether or not we make it contingent
25 upon delivery of certain megawatts results, and all

1 those sorts of things.

2 Q. Likewise, you have talked about the
3 cost reimbursement, how about revenue reimbursement
4 now. Why not reimburse the MUNIES for their lost
5 revenues?

6 A. Well, that's what the \$185 million if
7 we had to do that right now, they'd owe us.

8 Q. That's future. I am talking about
9 now.

10 A. No, that's the current approved
11 programs that we have in place right now at this time.
12 If you use a distributor rate impact test, and granted
13 this test is done across the province as opposed to
14 done for each of the individual utilities, so there may
15 be some difference in transfers among utilities there,
16 but on net they come out \$185 million dollars to the
17 good with our current programs.

18 Q. But this study, your consultant
19 studies shows that there is a resistants in the MUNIES
20 to implementing demand management programs because of a
21 perceived loss of revenue to those MUNIES. Now, that
22 is one of the barriers that you were talking about.

23 A. Yes, it was. And I think that was a
24 barrier, I think it was almost -- I don't want to put
25 thoughts in their head, or attribute thoughts that they

1 may not have had, but my reading of the situation was
2 they definitely wanted to participate, they wanted to
3 be compensated for their direct cost of participation,
4 and that their sense with respect to net revenue losses
5 was that it was all going to be negative, and that that
6 was part of an issue.

7 While we were working under a corporate
8 policy that we would not compensate municipal utilities
9 and that was announced to them at a general meeting, an
10 annual meeting of the Municipal Electric Association
11 two years ago, and that made them quite unhappy, to say
12 the least, and that situation has now changed.

13 MR. WILSON: A. I just might add to
14 that. The survey measures perceptions. We have been
15 talking about our estimate of what the facts are, and
16 you put your finger on a key issues, is that perception
17 and reality don't line up.

18 The survey was done a year ago. We have
19 had several meetings with the 40 large utilities, or I
20 guess, 30 large utilities, and discussion that's taken
21 place at those meetings and since then, from my
22 perception, is that the whole issue of net revenue or
23 lost revenue has just evaporated as a concern.

24 I am assuming that our field people have
25 been very effective in getting the message across and

1 dealing with this issue. So, I don't think that we
2 have to solve a problem that isn't there any more.

3 The negotiations we are having with the
4 large utilities right now, with the cooperation of the
5 MEA, indicate that net revenue concerns are just not a
6 big issue any longer.

7 Q. That would include the Toronto
8 Electric Hydro Commissioners?

9 A. That would include Toronto Hydro,
10 yes.

11 DR. CONNELL: Excuse me, that figure of
12 185 million, that is per annum, is it?

13 MS. FRASER: No, that's total. It's the
14 present value. If you take all of the decision
15 analysis summaries for each of the programs in the
16 program concept reference document, and you look at the
17 distribution rate impact test, one of the financial
18 tests that we used to determine the cost and benefits
19 of the program in this case from the distributor's
20 perspective, if you add all those up, some are
21 negative, some are positive, you come out on net,
22 positive \$183 million in present value terms for that
23 bundle of programs.

24 MR. H. POCH: Q. Over what period would
25 that be?

1 MS. FRASER: A. The period varies
2 because some of the programs are short, some of the
3 programs are long. It basically represents net
4 megawatt achievements of about almost 600 megawatts if
5 you add all the approved ones up in the PCRD.

6 Q. So that's over the life of the
7 programs?

8 A. Yes, present value terms.

9 MR. WILSON: A. Just one final touch on
10 this. Of the programs that are on the list, the
11 program that has the most detrimental effect on the
12 financial affairs of municipal utilities by far is the
13 one that they have acted most enthusiastically on, and
14 that's the water heater-wrapped program. It provides
15 substantial relationship benefits between them and
16 their customers, and it is an excellent opportunity for
17 them to provide service and increase their customer
18 satisfaction.

19 So, there are many other considerations
20 in a municipal utility's decision to proceed, and it is
21 interesting that the worse one from a financial
22 perspective is the most popular.

23 Q. I am sure my friend Mr. Watson will
24 follow up in his cross-examination.

25 Ms. Fraser, Mr. Wilson, if I was to go

1 back, let's say if I was to go back to Toronto Hydro
2 and say to them, "You can now undertake the most
3 ambitious energy efficiency improvement program in
4 North America and demand management program in North
5 America, you will be reimbursed 100 per cent of your
6 labour and hard costs for implementing that program,"
7 would Ontario Hydro reimburse those 100 per cent costs?
8 Is that what I am hearing from you?

9 A. I don't know the answer to the
10 question. The negotiations are still continuing.

11 Q. I thought I heard Ms. Fraser say that
12 there was going to be 100 per cent reimbursement.

13 MS. FRASER: A. I think I sort of made
14 it clear that I was speculating, but I expected that
15 direct costs would be refunded such as we are looking
16 at in water heaters, and certainly one of the things
17 that we are looking at in the individual metering
18 program.

19 Q. Going back to the consultant's study,
20 several other issues were raised, and I won't spend too
21 much time going through them, Mr. Wilson, but several
22 of the other issues that were raised by the consultants
23 in the study that's before you were that Ontario Hydro
24 personnel skills in the sales and customer service area
25 were lacking. Has anything been done to improve that

1 situation?

2 MR. WILSON: A. Can you show me where
3 that is?

4 Q. Yes, that's at page 82, page 25 of
5 the study, paragraph one on that page.

6 A. I'm sorry, I didn't get the
7 reference.

8 MR. MacLELLAN: A. I guess before Mr.
9 Wilson answers that, I maybe would like to add a little
10 colour commentary to that one.

11 The only specific program that was
12 mentioned in this consultant study it seems as being
13 extremely poor in terms of communication was the
14 showerhead program. I am surprised at that, and
15 actually I take it a fair bit of personal offence
16 because it was one of those programs that we tried our
17 best. We presented it to the MEA marketing committee
18 six months prior to program launch, we gave all program
19 materials to field staff and utilities four months
20 prior to program launch, 76 utilities representing over
21 a million customers managed to order bill inserts from
22 us over two months before program launch, and still the
23 quote says the showerhead program had no warning, no
24 lead time.

25 Q. Did you discuss this with your

1 consultant?

2 A. The consultant that did the report?

3 Q. Yes.

4 A. No. The name of the general manager
5 who said that are apparently confidential.

6 So, that's an area where the only way we
7 can see why that happens is communication within the
8 utility. The people that are field sales and customer
9 service staff talk to don't necessarily communicate
10 within their own utility. So, a number of these
11 specific quotes were surprising when the report came
12 out, and that could explain a bit their attitude about
13 the sales and customer service staff. But in addition,
14 those staff have undergone a lot of training over the
15 last two years. The goal is to bring their skills and
16 expertise a lot further ahead and would certainly be
17 further ahead from when these interviews were carried
18 out.

19 Q. Good. And the same page, the last
20 two paragraphs, this is page 82, Exhibit 290, there is
21 a key criticism raised, that the MUNIES are not
22 involved enough in the design, development and
23 implementation of demand management programs. Is this
24 being dealt with?

25 A. It is being dealt with, and that

1 input has been ongoing as well.

2 Two examples that come to mind are, one
3 is we had a new housing development committee that
4 co-developed the whole new housing program and three
5 utilities were members of the committee.

6 Another key example is the water heater
7 tune-up program. Sudbury Hydro is effectively a
8 co-developer of that program as well.

9 We run a lot of pilot programs. And
10 again it seems to be if we don't ask a specific utility
11 to be involved in a program, they assume that nobody
12 else was either. So, it's definitely a communications
13 issue.

14 MS. FRASER: A. Similarly, with respect
15 to working -- I am on the MEA demand management
16 committee. That committee will review programs,
17 endorse them, supposedly make that endorsements known.
18 For instance, the street lighting program was not only
19 at that committee, but also the Municipal Electric
20 Association Street Lighting Committee, and yet one of
21 the general managers of the utility had never heard of
22 it before, you know, yet it was in the press, and
23 that's just not true. His staff were involved in
24 certain projects. So, it's a communication issue.

25 Q. At page 86 of the document, page 29

1 of the study, also identified as the need to identify
2 and measure demand management targets at the municipal
3 utility level. What is occurring in this area?

4 A. The memorandum of understanding that
5 I talked about that is part of that negotiation with
6 the 30 largest municipal utilities, I believe this
7 issue will be dealt with in that process. Our intent
8 then is to work the Municipal Electric Association to
9 see how much of that same process we cascade down to
10 the medium size and into the smaller municipalities.

11 Q. Turning to page 28 of Exhibit 290.
12 Again, this is an extract from the OEB report, HR 20.
13 Referring to paragraph 3.3.2, at the bottom of page 28,
14 it appears by this paragraph that the MEA argued before
15 the OEB that the \$240 million shift in expenditures to
16 energy management programs from nuclear pre-engineering
17 work was issued without regard to it's appropriateness.

18 Do you have any comment on that, Mr.
19 Wilson?

20 MR. WILSON: A. I can't judge what
21 information the government had when they issued this.

22 Q. Okay. It also appears by that
23 paragraph that the MEA recommended to the OEB that
24 Hydro suspend those expenditures in that area and
25 undertake an analysis of the best use of the \$240

1 million.

2 Do you have any comment on the
3 appropriate use of those funds, Mr. Wilson, and do you
4 have any comment on that particular submission by the
5 MEA?

6 A. Well, in paragraph 3.3.3 on the top
7 of page 29, you see that our argument to the OEB was
8 that such a reassessment would compromise momentum and
9 getting results. And the results in the programs that
10 we are applying those funds to were cost-effective with
11 respect to alternative supply.

12 Q. On page 29, paragraph 3.3.5, Ms.
13 Fraser, it appears that the MEA expressed concern about
14 an overallocation of funds to your branch, the energy
15 management branch, which would result in unproductive
16 expenditures and mismanagement of programs. The MEA
17 appears here to have suggested that Hydro should review
18 it's current approach with the view of matching dollars
19 with realistic demand reduction targets.

20 Do you have any comment on that position
21 that appears to have been taken by the MEA, Ms. Fraser?

22 MS. FRASER: A. Well, I don't agree that
23 the expenditures were unproductive. All the demand
24 management programs that we have are economic.

25 I certainly don't agree that we are

1 mismanaging our programs. The \$240 million that was
2 re-directed over a three year period, we were able to
3 move on some significant opportunities that had
4 presented, and that we had worked to uncover. The
5 non-profit housing program was one, the government
6 audits were another. And I think that our demand
7 reduction targets are realistic given the results we
8 have achieved to date.

9 Q. Turning to page 97 of Exhibit 290,
10 it's a response to interrogatory 4.24.7.

11 Mr. Chairman, can we give that a number?

12 THE REGISTRAR: 261.43, Mr. Chairman.

13 ---EXHIBIT NO. 261.43: Interrogatory 4.24.7.

14 MR. H. POCH: Q. And that response notes
15 the MEA's strong support for demand management
16 initiatives as evidenced through a number of
17 resolutions in 1989, 1990, and 1991.

18 I take it, Mr. Wilson, those were the
19 resolutions that were speaking to a few minutes ago.

20 MR. WILSON: A. Yes.

21 Q. And they are set out on pages 101 for
22 1989, 103 for 1990, and page 99 for 1991; is that
23 correct?

24 A. Yes, that's right.

25 Q. How can you, or can you, reconcile

1 these resolutions in this position with the apparent
2 position taken by the MEA at this year's OEB which were
3 just discussing with Ms. Fraser?

4 THE CHAIRMAN: Well, is that something
5 they can really comment on this? The MEA are the
6 people that should answer that question, I think.

7 I think it's an inconsistency, as you
8 say, between the resolutions and the position adopted
9 by counsel at the hearing. I don't see how this panel
10 could comment on that.

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25 ...

1 [4:25 p.m.] MR. H. POCH: I will leave it up to later
2 questioning of the MEA.

3 Mr. Chairman, if I may have a minute?

4 THE CHAIRMAN: All right.

5 MR. H. POCH: It appears that a great
6 deal of my cross-examination in this area was covered
7 by the answers. I would just like to move forward. I
8 think I have another ten minutes.

9 THE CHAIRMAN: Well, we promised people
10 that they would stop at 4:30, but if it is ten minutes,
11 we will give you ten minutes.

12 MR. H. POCH: I would appreciate that.

13 THE CHAIRMAN: We will stop at 25 to.

14 MR. H. POCH: Thank you

15 MRS. FORMUSA: We are not going anywhere
16 quickly, I don't think.

17 THE CHAIRMAN: We will ring the bell at
18 that particular point in time.

19 MR. H. POCH: Mr. Chairman, I would like
20 to now move to the last area on my outline of
21 cross-examination, costs and comparative analyses.
22 And if we could turn to Exhibit 291, Mr. Chairman, I
23 may be able to shorten it even more so.

24 And at page 10 of that exhibit, page 11 -
25 that being page 11 of the Ministry of the Environmental

1 Approvals Branch comments in the formal review found in
2 Exhibit 146 to these proceedings, and that last
3 paragraph on page 11 of Exhibit 146 states that:

4 It should be possible for the
5 proponent to identify and quantify the
6 economic effects of adverse and
7 beneficial environmental consequences of
8 each alternative, the distribution of
9 these effects and the costs to mitigate
10 adverse environmental effects.

11 The document should show the analysis
12 of environmental effects which, at each
13 stage of the selection process, help to
14 narrow the alternative options down to
15 the final preferred plan rather than
16 deferring these analyses to the
17 individual project level.

18 Q. Panel, has Ontario Hydro undertaken
19 this type of quantitative analysis in respect of the
20 demand management plan and then compared the results of
21 that analysis, if it has occurred, with Ontario Hydro's
22 preferred supply plan or with any other of the supply
23 plans?

24 MR. SHALABY: A. Quantitative, we have
25 presented data that shows the impact of demand

1 management plan. That is the incentive quantification
2 that we have presented at this hearing.

3 Q. Has it been compared with the results
4 of such types of analysis in respect of preferred
5 supply plans?

6 A. Well, see, the demand management plan
7 is part of the preferred plan, so to compare it to the
8 preferred plan is not possible. It is part and parcel
9 of the prepared plan. It is not either demand
10 management or the preferred plan. It is a preferred
11 plan including demand management.

12 Q. In the other supply plans that are
13 put forward, is it also included? Is the demand
14 management plan included in those supply plans and
15 accordingly, it can't be compared?

16 A. Well, we have done two things: We
17 compared a plan without demand management to a plan
18 with demand management. That much we have done.

19 Q. But as a common element of all of the
20 other supply plans, demand management is included,
21 isn't it?

22 A. Yes.

23 Q. And just to close off, panel, have
24 you undertaken any further alternative demand
25 management plans to that put forward in your five

1 scenarios, your five cases, and the evidence that has
2 been put forward in evidence in-chief, or will you be
3 putting forward any other demand management cases?

4 MR. WILSON: A. We have not. We don't
5 have any other cases. It has been a struggle to get
6 the five together that we have talked about, to do a
7 good job of those.

8 As Ms. Formusa or Mr. Campbell had said
9 earlier, we have undertaken to provide to the Board
10 information on a rebalance plan taking into account the
11 new demand management and non-utility generation and
12 any other changes that are going to seem appropriate by
13 the end of this year.

14 And as we have said, we are not convinced
15 that every detail of scenario C is exactly how we are
16 going to accomplish the 5200 megawatts of demand
17 reduction by the year 2000. And as we get a better
18 handle on that, we will have additional plans or
19 modifications or refinements of the plan.

20 MR. H. POCH: Those are my questions, Mr.
21 Chairman.

22 THE CHAIRMAN: Thank you, Mr. Poch.

23 MRS. FORMUSA: Just one point of
24 assistance for Mr. Poch. A reference was made to an
25 undertaking given in Panel 1. You might check

1 Undertaking 134.27, municipal utilities with recent
2 summer peaks.

3 THE CHAIRMAN: Thank you, Ms. Formusa.

4 And Mr. Monger, you will be ready to go
5 tomorrow morning?

6 MR. MONGER: Monday morning, Mr.
7 Chairman.

8 THE CHAIRMAN: Monday morning, of course.
9 Monday morning. The weeks go by so fast. Monday
10 morning at 10 o'clock.

11 MR. H. POCH: Mr. Chairman, will there be
12 a scoping session Monday morning?

13 MS. MORRISON: Yes, there is.

14 THE CHAIRMAN: Yes, there will be a
15 scoping session Monday morning at nine o'clock for
16 Panel 5.

17 MS. MORRISON: That's right.

18 MS. OMATSU: Mr. Chairman, I have spoken
19 with counsel for the CAC and I have their permission to
20 go in advance of them Monday morning.

21 THE CHAIRMAN: All right. And how long
22 do you think you will be?

23 MS. OMATSU: I should be, I think, less
24 than one hour.

25 THE CHAIRMAN: Okay.

1 MS. OMATSU: Thank you.

2 THE CHAIRMAN: That is all right, Mr.
3 Monger, is it? That is correct, is it?

4 MS. OMATSU: I spoke with Mr. Rosenberg.

5 THE CHAIRMAN: Well, Mr. Monger doesn't
6 seem to know about it. (laughter)

7 All right. We are finished then until
8 Monday morning at ten o'clock. And the scoping session
9 for Panel 5 will start without the benefit of our
10 presence Monday morning at nine o'clock.

11 THE REGISTRAR: This hearing is adjourned
12 until ten o'clock Monday morning next. Nine o'clock
13 Monday morning next there will be a scoping session for
14 Panel 5.

15 ---Whereupon the hearing was adjourned at 4:34 p.m.,
16 to be reconvened on Monday, the 16th day of
17 September, 1991, at 10:00 a.m.
(Scoping session at 9:00 a.m.)

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